The Bradshaw Lecture

ON

THE URINARY PIGMENTS IN THEIR PATHOLOGICAL ASPECTS.

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MR. PRESIDENT AND GENTLEMEN,—The invitation to deliver a lecture before such an audience as this at the same time confers a great honour and imposes a heavy responsibility. For the honour I beg to offer my sincere thanks, and to the distinguished men who have preceded me in the position which I for the moment occupy I desire to apologise in advance for any failure on my part to attain to the high standard which they have set up.

THE CLASSIFICATION OF URINARY PIGMENTS.

The grouping together, under the collective name of "urinary pigments," of a number of substances which need have nothing in common beyond the facts that they are met with in the urine and are possessed of colour, can only be looked upon as a temporary expedient, although it may be justified on grounds of convenience, and is even rendered necessary by the incompleteness of our knowledge. It may confidently be predicted that in the course of time this will share the common fate of such elementary classifications and that the group will undergo a gradual disintegration, as one by one its individual members can be referred to their true places in the chemical scheme. Some of the substances usually included do not even fulfil the above two conditions, but are merely coloured products formed by the action of reagents upon constituents of urine which are themselves colourless. Among these are urorosein and the indigo pigments, although of these latter indigo blue is occasionally met with as a sediment or in impalpable suspension in urine in which it has been formed by the decomposition of indoxyl-glycuronic acid, the less stable of its parent substances.

Even of the urinary pigments more correctly so-called not a few are excreted, either wholly or in part, as colourless or faintly-coloured parent substances, which quickly become converted into their coloured derivatives when the urine is exposed to light and air. These very unstable precursors are known as "chromogens," a convenient term which makes no assumption as to their true nature. When once the chromogen has been isolated and sufficiently studied we no longer speak of it as such. Thus it is not customary to describe indoxyl-sulphuric acid as the chromogen of indigo blue and red, or homogentisic acid as the chromogen of the alkapton pigment.

Coloured substances may enter the alimentary canal in articles of food, in sweetmeats or in medicines, and may be thence absorbed and excreted either altered or unaltered by the kidneys. With these may be included pigments formed during the passage through the body of constituents of food or drugs which are not themselves coloured, such as the oxidation products of the dioxybenzenes present in carboluria, and the yellow santonin pigment. It is important that one should have some acquaintance with these substances in order that one may distinguish them from others, but in themselves they have no special pathological significance.

In yet a third sub-group may be classed certain pigments which are normal constituents of the body, but which only find their way into the urine under morbid conditions. Such are hæmoglobin, bilirubin, biliverdin, and melanin, which last may appear in abundance in the urine, mainly as a chromogen, in cases of disseminated melanotic sarcoma. The excretion of such pigments by the kidneys affords diagnostic indications of great value, but these indications are, for the most part, well recognised, and their interpretation forms part of the daily routine of clinical practice.

Lastly, there is a group of colouring matters, far less familiar, which may claim to be urinary pigments in a more special sense, seeing that they may all be present, if only in traces, in the urine of persons who may fairly be considered to be in normal health. I refer to urochrome, urobilin, hæmatoporphyrin, and uroerythrin, and it is to the consideration of these four pigments that I propose to devote the time at my disposal this afternoon. Urochrome is the most abundant of the urinary pigments, and to it the familiar yellow colour of normal urine is probably entirely due. Urobilin, which only occurs in very small amount in normal urine and wholly in the form of chromogen, has no influence upon its colour, but in many morbid conditions it appears in greatly increased quantity and to a large extent as the formed pigment. Under such circumstances it has a distinct effect upon the colour of the liquid and its single dark absorption band is conspicuously visible on direct spectroscopic examination without the addition of any reagent. Hæmatoporphyrin is present in mere traces in normal urine and often in increased quantity in disease, but only very seldom does it occur in sufficient abundance to have any material effect upon the colour. Uroerythrin, if not strictly a normal urinary constituent, may appear in small amounts as the result of very trifling deviations from perfect health. In morbid urines it is often abundantly present, and it is chiefly conspicuous as the colouring matter of pink urate sediments.

UROBILIN.

Since its discovery by Jaffe,[1] in 1868, urobilin has attracted far more attention than the other members of the group, and there has grown up around it a literature which far exceeds in bulk that of all the other urinary pigments put together. On this account it will be more convenient to consider it first. The interest which it has awakened has been largely due to Maly's[2] observation that by the action of sodium amalgam upon bilirubin a product is obtained which in its main properties resembles urobilin very closely, so closely, indeed, that the identity of the two has been widely assumed, and the name of hydrobilirubin is not infrequently applied to the urobilin of urine, as also to the stercobilin obtained from fæces by Vanlair and Masius.[3] However, there have always been some who have questioned the identity, although not the similarity, of urobilin and Maly's hydrobilirubin, which differ not a little in their minor properties, and some combustion analyses of urobilin carried out by Mr. F. G. Hopkins and myself[4] show that whereas the urobilin of urine and the stercobilin of fæces are identical in composition as also in properties they differ conspicuously from hydrobilirubin, especially in the much smaller percentage of nitrogen which they contain.

—	Hydrobilirubin (Maly).	Urobilin (Hopkins and Garrod).
C.	64·68	3·68
H.	6·93	84
N.	9·22	4·11
O.	19·17	24·47
—	100·00	100·00

It would seem, indeed, that there is a group of substances which agree in showing the absorption band of urobilin and in exhibiting a brilliant green fluorescence with zinc chloride and ammonia, but which differ in stability and other minor respects and are not chemically identical. Such urobilinoid products have been obtained from bilirubin, hæmatin, hæmatoporphyrin, and urochrome by the action of reducing agents, and from some of these by what appear to be processes of oxidation. That they have something in common seems evident, and we are surely justified in regarding them as affording important evidence of the chemical relationship of the substances from which they are obtained.

Of the chromogen of urobilin we know very little as yet,

[1] Centralblatt für die medicinischen Wissenschaften, 1362, Band vi., p. 243; Virchow's Archiv, Band xlvii., 1869, p. 405.

[2] Centralblatt für die medicinischen Wissenschaften, 1871, Band ix., p. 849; Annalen der Chemie und Pharmacie, 1872, Band clxiii., p. 77.

[3] Centralblatt für die medicinischen Wissenschaften, 1871, Band ix., p. 369.

[4] Journal of Physiology, 1898, vol. xxii., p. 451.

for its great instability renders its isolation and study a matter of no small difficulty. We do know, however, that it is precipitated, as urobilin is, by saturation of the urine with ammonium sulphate (Eichholz[5]) and that it is readily soluble in chloroform. As Riva has pointed out, a chloroform extract of fæces is often practically colourless, but may nevertheless show a urobilin band of great intensity on the addition of an acid. Whatever be the nature of this chromogen it is certainly not urochrome.

Urobilin and its chromogen are widely distributed in the human body. In the fæces both in health and disease they are present in far larger amounts than in the urine. They have been found in bile removed from the gall-bladder during life, as well as in that obtained post mortem and are met with in the blood and in serous effusions.

As obtained from all the above sources specimens of urobilin agree in all their properties and are clearly identical in their nature. Time forbids me to enter here into the evidence upon which this assertion is based or to discuss the views of those who have maintained the contrary thesis and who hold that even in urine more than one kind of urobilin is met with. For such discussions I must refer you to the writings of MacMunn and others upon the chemical and spectroscopic sides of the subject, with the pathological aspects of which we are now concerned. I would merely recall that as regards urinary and fæcal urobilin not merely their properties but also the results of ultimate analyses bear witness to their identity.

Various theories have been put forward to account for the origin of urobilin and for the conspicuous variations in the amounts excreted in the urine. The earliest of these, the theory of Maly, assumes that it is formed by the reduction of bilirubin in the intestine, and is thence in part absorbed, and excreted by the kidneys. In order to meet the objections which present themselves to such an intestinal theory in its simplest form more than one hepato-intestinal theory has been propounded in more recent years. According to the purely hepatic theory of Hayem[6] which was adopted by Tessier[7] in his thesis urobilin is formed in the diseased or disordered liver as bilirubin is by the same organ in health, and the appearance of excess of urobilin in urine affords evidence of a derangement of the hepatic functions. Others maintain that urobilin is formed in the tissues at large, either by the reduction of bilirubin or directly from the blood pigment. Kunkel,[8] and more recently Mya,[9] with Giarré[10] and others of his pupils, have advocated the former or histogenic theory, and some, including Leube,[11] have ascribed to the kidneys the chief share in the process. Dietrich Gerhardt[12] is the most recent upholder of the second or hæmatogenous theory, although he considers it to be proven that some of the urobilin of urine is of intestinal origin.

It will be seen that the above theories one and all start with the assumption that urobilin is derived from hæmoglobin, either directly or through the intermediate stage of bile-pigment. Thudichum[13] alone maintains that urobilin is nothing more or less than a product of the decomposition of urochrome, and that neither urochrome nor urobilin are related to, or derived from, the pigments of the blood or bile.

The chief seat of the formation of urobilin (for it will be convenient to employ this term as including both pigment and chromogen) is undoubtedly the intestinal canal. This can only be gainsaid by denying the identity of the urinary and fæcal pigments. The quantity normally present in the fæces is far larger than that which enters the intestine with the bile, and, as we shall presently see, there is strong evidence that the urobilin in bile is itself of intestinal origin. This being so, it is clear that all theories other than the intestinal and its modifications merely attempt to trace a second source for the urobilin of the urine. It is equally clear that the substance from which the intestinal urobilin is formed is the bile-pigment. Under ordinary conditions the bile-pigment is destroyed in its passage along the intestine and does not appear as such in the fæces. In its place we find large quantities of urobilin which in its turn disappears when occlusion of the common duct prevents the entrance of bile into the intestine. Again, when under certain morbid conditions the bile-pigment passes along the intestine unaltered urobilin is absent from the fæces. However, the conversion of bilirubin into urobilin is no mere process of reduction but involves a much more radical change with elimination of nitrogen.

That the change is brought about by bacterial action there is much evidence to show. When bile is inoculated with fæcal material and kept in an incubator a rapid formation of urobilin takes place and at the same time the bile-pigment diminishes and ultimately disappears. This has been repeatedly observed and the fact can be verified without difficulty. More striking results have been got by Friedrich Müller,[14] Adolf Schmidt,[15] and Esser[16] who obtained urobilin by cultivating intestinal bacteria in broth to which an alkaline solution of bilirubin had been added. The best results were obtained under anaerobic conditions. The formation of urobilin began about the second day of incubation and reached its maximum before the seventh day. At a later period the pigment formed appeared to be again destroyed. Schmidt and Esser failed to obtain this result with pure cultures of various fæcal bacteria, but it was shown by control experiments that the urobilin found was not introduced with the material used for inoculation.

Dr. J. H. Drysdale and I are engaged upon a further study of this subject and we have found that the suitable conditions are not very readily reproduced. I need only state here that we have obtained results agreeing with those of other observers. In our anaerobic cultures the band has only appeared after the broth has been allowed to stand for some time exposed to the air and after the addition of an acid. This is a point of some importance, as one might be led to conclude from a hasty examination that no urobilin has been formed when it is present in a chromogen form in the culture medium which has been kept deprived of all oxygen. The product so formed has the chief properties of urobilin, but it has still to be proved that it is identical with the natural pigment. Esser who made some experiments with the unorganised ferments of the intestine failed to find that they had any power of converting bilirubin into urobilin.

Further evidence is afforded by the examination of the excreta of new-born infants. As a rule the meconium and solid excreta of the first day or two of life are urobilin free and sterile, but about the third day traces of urobilin are usually found and cultures yield a few bacterial colonies. Some observations of Dr. Drysdale and mine agree with those of previous observers on this point, but in one instance we found a considerable amount of urobilin in the meconium expelled immediately after the infant's birth. The mother, who had been ill for some time previously, died comatose on the second day after parturition and was found to have multiple abscesses of the kidneys. Cultures from the specimen of meconium remained sterile, and this exceptional observation can only be reconciled with the bacterial theory by supposing that the urobilin present was of maternal origin. Lastly, Dr. Vaughan Harley has found that the green stools passed after the administration of calomel are rich in bile-pigment and poor in urobilin and this he attributes to the antiseptic action of the drug.

It is in the large intestine, and especially in its upper regions, that urobilin is mainly formed. This has been shown by Schmidt, by Vaughan Harley,[17] and by Macfadyen, Nencki, and Sieber.[18] However, the range of the pigment in the intestine varies very widely in different individuals and it may even extend to the jejunum. Of two dogs deprived of their large intestine, upon which Vaughan Harley experimented, one produced considerable quantities of the pigment and the other very little; and it is noteworthy that the estimation of the aromatic sulphates of the urine showed that in the intestines of the dog with fæces rich in urobilin the bacterial processes were much more active than in those of the other animal.

A question of great interest from the theoretical standpoint,

[5] Ibid., 1893, vol. xiv., p. 326.
[6] Gazette Hebdomadaire, 1887, tome xxiv., pp. 520 and 534; Gazette des Hôpitaux, 1889, tome lxii., p. 1314.
[7] Essai sur la Pathologie de la Sécrétion Biliaire, Paris, 1889.
[8] Virchow's Archiv, 1880, Band lxxix., p. 655.
[9] Archivio Italiano di Clinica Medica, 1891, vol. xxx., p. 101. Lo Sperimentale, 1896, vol. l., p. 71.
[10] Lo Sperimentale, 1895, vol. xlix., p. 89; ibid., 1896, vol. l., p. 81.
[11] Verhandlungen der Würzburger Phys. Med. Gesellschaft, 1886, Band iv., p. 23.
[12] Zeitschrift für klinische Medicin, 1897, Band xxxii., p. 303.
[13] Virchow's Archiv, 1897, Band cl., p. 536; ibid., 1898, Band clii., p. 156.
[14] Schlesische Gesellschaft für Vaterland Kultur, January, 1892.
[15] Verhandlungen des XIII. Congresses für Innere Medicin, Wiesbaden, 1895, p. 320.
[16] Untersuchungen über die Entstehungsweise des Hydrobilirubins, &c., Dissertation, Bonn, 1896.
[17] Brit. Med. Jour., 1896, vol. ii., p. 898.
[18] Archiv für Experimentelle Pathologie und Pharmacologie, 1891, Band xxviii., p. 311.

but which has received singularly little attention, is whether urobilin is the only product formed from bilirubin in the intestine or is only one of several derivatives. If the former it is clear that, under normal conditions, the bacteria of the intestine are able to change the whole of the bile-pigment supplied to them into urobilin and increased formation can only have one cause—viz., an increased supply of bile-pigment. If, on the other hand, urobilin is only one of two or more products formed, the quantity of bile-pigment and the degree of bacterial activity may have an important influence upon the yield. The question is one to which it is not easy to give a decided answer. Undoubtedly the colour of the fæces affords little indication of the quantity of urobilin which they contain, for this pigment may be, and usually is, chiefly in the form of chromogen. Repeated extractions with alcohol, chloroform, and ether diminish their colour but slightly, whereas obstruction of the bile duct renders them almost colourless. This stongly suggests that urobilin is not the only coloured product formed from the bile-pigment, but when further extraction with acids or alkalies is resorted to it is difficult to be sure how far the colour of the extracts is due to pigments formed under the influence of the reagents employed. Culture experiments *in vitro* may perhaps throw important light upon this question.

The possible influence of the amount of bacterial activity in the intestine upon the quantity of urobilin formed has received little attention except from Dr. Vaughan Harley, who attaches considerable importance to it and whose observations on the relation of the excretion of aromatic sulphates to that of urobilin are of much interest.

The reaction of the intestinal contents probably plays an important part in this connexion. Esser found that acidity of the culture medium inhibited the change which took place under the influence of bacteria in alkaline broth. Macfadyen, Nencki, and Sieber have shown that the contents of the small intestine are acid and that an alkaline reaction is only acquired below the ileo-cæcal valve. These two observations show why it is that the colon is the chief seat of urobilin formation.

The green stools occasionally passed in typhoid fever are rich in biliverdin, to which they owe their colour, but they contain no urobilin. Although bile-pigment is abundantly available the urobilin-forming process is suspended, and it is a significant fact that such stools are always distinctly acid in reaction. Acid stools of a like consistence but of a yellow colour are sometimes passed in the same disease and these also are free from urobilin, and the fact that diarrhœa may persist unchecked after the stools have resumed their ordinary character excludes the effect of mere rapid transit of the intestinal contents.

The next question which calls for consideration is whether or no the urobilin of urine is derived from the large supply of the pigment in the intestine. Riva has shown by experiments upon animals that urobilin introduced into an isolated loop of intestine undergoes absorption, and Achard and Morfaux[19] found that the chromogen diffuses through membranes more readily than the formed pigment; but the most convincing observations are those of Friedrich Müller[20] who showed, in the first place, that complete occlusion of the common bile duct causes urobilin to disappear from the fæces, and a few days later from the urine also. This observation has been repeatedly confirmed, and of its accuracy anyone can convince himself who examines a suitable case. It is true that the fæces usually retain a mere trace of urobilin, which has been ascribed, and probably correctly, to the entry of small quantities of bilirubin into the intestine through its walls. Examination of cases of biliary fistula with occluded duct, in which the jaundice has had time to disappear, would settle this point. I may mention that in the fæces of two infants with congenital atresia of the bile ducts I have failed to detect even the usual trace of urobilin. Müller further observed the remarkable fact that when pig's bile was introduced through a tube into the stomach of his patient not only did urobilin reappear in the fæces, but the urine also, after removal of the bile-pigment showed a pronounced urobilin band which remained visible for several days, only to disappear again after the fæces were once more urobilin free. Nature performs a similar experiment whenever a temporary obstruction of the bile duct is removed, and the urobilinuria which is associated with the entrance of the pent-up bile into the intestine is a well-recognised phenomenon.

In typhoid fever urobilin and its chromogen disappear from the urine when green stools free from this pigment have been passed for a day or two.[21] In one such case the urine, which I was watching from day to day, showed one morning an intense urobilin band after a period of complete absence and the stools of the same day were found to have regained the ordinary consistence and colour of typhoid motions, to be alkaline in reaction, and rich in urobilin. Beck[22] has shown, and Vitali has confirmed the observation, that when the common bile duct of a dog is tied and a biliary fistula is formed the disappearance of urobilin from the fæces is followed by its disappearance from the bile also, but when the fistula bile is introduced into the stomach of the animal urobilin quickly reappears in the bile, and in this connexion it is interesting to note that I have failed to detect urobilin in the fistula bile of a patient with occluded bile duct whose fæces were practically urobilin free. Hence it would appear that the urobilin present in bile is also some of that which has been absorbed from the intestine and is not produced by the liver.

Such is the evidence upon which the intestinal theory of urobilinuria rests, and it seems to be clearly established that absorption from the intestine does take place and that of the urobilin so absorbed some is excreted with the bile and some in the urine. When, however, we attempt to apply this theory to the explanation of the clinical facts difficulties are encountered which cannot as yet be wholly met, and it soon becomes evident that the theory as above stated is inadequate and that some amplification or modification of it is necessary.

Observations bearing upon the ratio of urinary to fæcal urobilin are not very numerous and the results obtained are somewhat conflicting. Friedrich Müller states that a parallelism is only observed in extreme cases. Gerhardt,[23] who employs a spectro-photometric method of estimation, obtained widely different ratios in different cases, varying as greatly as from 1 : 3 to 1 : 40. Vitali,[24] too, has noticed similar variations in different cases. Riva[25] and Zoja, on the other hand, have found that in individual cases the fluctuations of urinary and fæcal urobilin are in the main parallel and that an increased amount in the fæces is attended by an increased excretion by the kidneys. They attribute the observed departures from this rule in part to the slow excretion of the absorbed pigment, which renders possible continued urobilinuria after the amount in the intestines has become conspicuously diminished, and in part to the dependence of the urinary excretion of urobilin upon the integrity of the kidneys. They rightly urge that isolated observations are of little value in this connexion and that a just notion can only be obtained by continuous observations over a considerable period.

Leaving aside the question of the relative value of the methods employed, other influences than those already referred to suggest themselves as possibly disturbing the ratio. Even if it be granted that the estimation of the amount of urobilin present in the solid excreta of a given period affords a true indication of the quantity of the pigment present in the intestinal canal—and it is by no means certain that it does so—its distribution must surely materially influence absorption. The researches of Schmidt and Vaughan Harley have shown how widely the distribution of the pigment varies in the intestines of different individuals. The consistence of the intestinal contents suggests itself as another disturbing factor, and one can imagine a disturbance of the ordinary relation between the amounts excreted in the bile and urine respectively.

Last, but by no means least, it is not certain that all the urobilin absorbed from the intestine is excreted as such. The very small amount present in normal urine and its complete absence from that of certain animals, such as dogs, in whose intestines it is present in considerable quantity, rather suggest that the pigment is in part subjected to change in its passage through the body and is excreted in some altered form.

In view of the conflict of evidence further observations bearing upon the ratio between urinary and fæcal urobilin are needed, but it seems clear that in many instances

[19] Comptes Rendus de la Société de Biologie, 1899, tome vi., p. 50.
[20] Loc. cit.
[21] St. Bartholomew's Hospital Reports, 1897, vol. xxxiii., p. 13.
[22] Wiener Klinische Wochenschrift, 1896, Band viii., p. 617.
[23] Zeitschrift für klinische Medicin, 1897, Band xxxii., p. 302.
[24] La Clinica Medica Italiana, 1899, vol. xxxviii., p. 674.
[25] Archivio Italiano di Clinica Medica, 1896, vol. xxxv., p. 367.

increased excretion in the urine is connected with increased production in the intestine, as evidenced by the presence of unusual quantities in the fæces.

The effect of constipation upon the excretion of indican, the parent substance of which, indol, is formed by bacterial action in the intestine, is so marked that it is natural to expect that it will have a similar effect upon the excretion of urobilin in urine, the stagnation of the contents of the colon allowing more time for absorption. George Hoppe-Seyler states that retention of the contents of the colon does increase the urobilin of urine, but that obstruction of the small intestine has no such effect. Dietrich Gerhardt, on the other hand, attaches little importance to constipation in this connexion and quotes cases of perityphlitis treated by opium in which when the temperature fell there was an enormous decrease of the urinary urobilin, although the intestines were still kept at rest. He also gives a series of observations upon a convalescent patient whose bowels were only moved every fourth or fifth day. Here, it is true, the maximum of urobilin in the urine was reached on the day following an action of the bowels, but if we admit (as I think we must, from what is seen when occlusion of the common bile duct occurs) that the absorbed urobilin is only slowly excreted, his figures point to a distinct increase of excretion under the influence of constipation, the full effect of the evacuation being seen only on the third day after its occurrence. Bargellini,[26] who made an elaborate series of observations bearing upon this point, arrived at the conclusion that in simple atony of the bowel the degree of constipation is without influence upon the amount of urinary urobilin, but that in cases of typhoid fever it causes an obvious increase, whereas disinfection or emptying of the lower bowel caused a noticeable decrease in the amount. If we study Bargellini's tables we find that a similar explanation may be given of many of his results. In several typhoid fever cases a continuous series of daily observations were made, whereas in none of the other cases were observations carried on to the second and third day after the evacuation of the bowel. Further observations upon this point, bearing in mind the slowness of the excretion of the absorbed urobilin, would be of much interest.

The most serious objection which has been raised to the intestinal theory is based upon the connexion which undoubtedly exists between urobilinuria and liver diseases. It is by no means the case that marked excess of urinary urobilin is always associated with obvious hepatic derangements, but there can be no question that conspicuous urobilinuria usually accompanies such diseases as cirrhosis and carcinoma hepatis. This fact, coupled with the presence of urobilin in the bile, formed the basis of the hepatic theory of Hayem and Tessier. However, the theory that the liver itself, and especially the disordered liver, manufactures urobilin, whilst it will explain the association under discussion entirely fails to explain the disappearance of this pigment from the bile and urine alike when the bile duct is occluded and its reappearance in both when bile is introduced into the stomach.

There are two different ways in which the influence of the liver may be reconciled with the intestinal origin of the urobilin of urine. We may suppose either that the condition of the liver exerts its influence at the beginning of the cycle by affecting the quantity and quality of the bile entering the intestine, and so indirectly the amount of urobilin formed, or that the liver lays hold upon the urobilin after its absorption and excretes it in part in the bile and in part converts it into some other substance. There can be little doubt that the state of the liver exerts an influence upon the *quantity* of bile-pigment formed and Riva and Vitali have shown that in phosphorus poisoning and acute yellow atrophy respectively the destruction of the liver cells practically puts an end to the formation of bile-pigment and that as a consequence urobilin may disappear from the fæces and urine. We should, indeed, expect that such quantitative influences would tell in the direction of diminution rather than increase. On the other hand, the hepato-intestinal theory of Riva,[27] which he has worked out with the aid of L. Zoja [28] and other members of the school of Parma, attributes to the condition of the liver an important influence upon the *quality* of the bile-pigment formed. The differences of quality are evidenced by the colour of the bile, of which the reddish-brown variety yields urobilin much more readily than the greenish. According to Zoja[29] the essential difference lies in the relative amounts of bilirubin and biliverdin present. These authors, together with Cavalli[30] and Chiodera,[31] have clearly shown that different biles exhibit marked differences in respect to the ease with which their contained pigment is converted into urobilin and that the bile of different animals differs widely in this respect, the green bile of vegetable feeders yielding urobilin less readily than that of carnivora. Cavalli also found that the bile obtained from the bodies of human patients agreed in its characters with what might be inferred from the excretion of urobilin during life. It is evident that this theory involves the formation from bile-pigment of other products besides urobilin, for if under normal conditions it is all converted into urobilin in the intestine increased convertibility can obviously lead to no increase of the yield. It also supposes a direct dependence of the quantity of urobilin in the urine upon that in the intestine, unless, as Riva himself suggests, the absorbed pigment be not all excreted unchanged. Granting that, as is most probable, urobilin is not the only product formed from the bile-pigment it seems clear that the quality of the bile must have a material effect upon the quantity of urobilin produced in the intestine, and the question is rather whether the qualitative changes in the bile formed by disordered livers are so great as this theory demands—in a word, whether it is capable of explaining all the facts.

An alternative theory, originally suggested by Murri and independently by Beck, has been elaborated by Vitali,[32] a pupil of the former. Vitali maintains that the hepatic cells have a strong affinity for urobilin, which they pick out from the blood, after it has been absorbed from the intestine, and re-convert into bilirubin. He further supposes that these cells have a still greater affinity for hæmoglobin and bilirubin, and that if they are called upon to deal with these latter pigments the urobilin brought to them may escape conversion. Thus when excessive hæmolysis is going on the liver cells may be so occupied that the urobilin passes them unchanged, or more urobilin may be brought to them than they are able to cope with, whereas disease of the liver may be supposed to lead to the same result by impairing the power of the cells to deal with the pigment. Morfaux,[33] who was evidently unacquainted with Vitali's writings, propounded a similar theory in his thesis, but offered no suggestion as to the nature of the change which the pigment undergoes in the liver. It may be pointed out that this theory includes two distinct hypotheses, and even if we doubt the re-conversion of urobilin into bilirubin we may still accept the first proposition that the liver cells are capable of laying hold upon the urobilin in the circulation. That they do so is indeed shown by the presence of urobilin in the bile whenever this pigment is being formed in the intestine. Some at least of the urobilin waylaid by the liver is excreted unchanged by that organ. If urobilin were merely a reduction product of bilirubin its re-conversion into that substance would be comparatively simple, but no one has yet obtained bilirubin by the oxidation of urobilin, and, as has been pointed out, the change involved is of a much more radical nature. To this objection Vitali replies by dismissing the urobilin analyses made by Hopkins and myself as proving nothing, because the material analysed was in his opinion obviously contaminated by an organic iron compound, since some of the products yielded a trifling ash in which iron could be detected. In so doing he ignores the close agreement of the results obtained from both fæces and urine by three different processes and also the fact that the figures obtained from the products with ash agreed with those got from wholly ash-free specimens.

He made some interesting experiments upon dogs and obtained evidence of increased formation of bile-pigment during the circulation of blood containing urobilin. The bile formed appeared more highly coloured and caused more absorption of the violet end of the spectrum, but

[27] Lo Sperimentale, 1892, vol. xlvi., p. 119.
[28] Lo Sperimentale, Milan, 1894; Lo Sperimentale, 1895; Gazzetta Medica di Torino, 1896, vol. xlvii., No. 12.
[29] Archivio Italiano di Clinica Medica, 1895; Conferenze Cliniche Italiane, vol. ii., p. 201; La Clinica Medica Italiana, 1898, vol. xxxvii., p. 385.
[26] Bollettino della Societa Medico-Chirurgica di Pavia, 1897.
[30] Archivio Italiano di Clinica Medica, 1896, vol. xxxv., p. 364.
[31] Gazzetta Medica di Torino, 1896, vol. xlvii., No. 29.
[32] Il Morgagni, 1897, vol. xxxix., p. 225; La Clinica Medica Italiana, 1899, vol. xxxviii., p. 674.
[33] Recherches sur l'Urobiline, Paris, 1899.

the quantity of bile was not increased. No such results were obtained when a saline solution containing urobilin was substituted for blood. The obscuration of the violet end of the spectrum, upon which Vitali chiefly relied as evidence of an increased formation of bile-pigment, was shown not to be due to an excess of urobilin as such. Moreover, he could obtain no evidence that the presence of urobilin caused hæmolysis or had a cholagogue effect. It is, however, clear that more complete proof is required before so remarkable a phenomenon as the re-conversion of urobilin into bilirubin in the liver can be accepted as an established fact. Riva[34] objects to this theory that in cases of cirrhosis and carcinoma hepatis the intestinal as well as the urinary urobilin is conspicuously increased, a fact of which the theory takes no account. To this Vitali replies that the increase of intestinal urobilin in such cases is not constant, and when present may be ascribed to excessive hæmolysis and increased excretion of urobilin in the bile.

These two hepato-intestinal theories embody the only attempts yet made to explain what is a very real difficulty in connexion with the intestinal theory. It is, of course, possible that both are to some extent true, and that the influence of the liver is felt both at the beginning and the end of the cycle. As has been mentioned, Riva himself thinks it probable that some of the absorbed urobilin is changed in its passage through the body, and suggests that it may be converted into urochrome. This suggestion will be again referred to when we come to speak of that pigment.

One more objection must be mentioned. Urobilinuria is not infrequently observed when the bile duct is partly obstructed and the quantity of bile entering the intestine is diminishing. In considering such cases the possibility of antecedent urobilinuria and slow excretion must be considered. However, Vitali records a case in which this could be excluded and explains the facts by supposing that the liver cells are occupied with the absorbed bilirubin, and that consequently the urobilin which is still being formed in the intestine so escapes conversion. Vaughan Harley, on the other hand, suggests that the partial removal of the antiseptic influence of the bile encourages bacterial activity, and that in spite of a diminished supply of bile-pigment the yield of urobilin is increased. An investigation of the fæces in such cases would supply important evidence upon this point.

There remains to be considered the question whether there are sources of urobilin in the body other than the intestinal. Its disappearance from the urine when the bile duct is occluded shows that no such second process is usually at work and disposes of the theory that urobilin is formed from bilirubin in the tissues at large, for under such circumstances although the tissues remain loaded with bilirubin the excretion of urobilin is arrested. There are, however, some, and notably Gerhardt, who consider that a direct formation of urobilin from hæmoglobin cannot be excluded, although the urobilinuria which accompanies hæmolysis and the absorption of extravasated blood may be explained by the increased formation of bile-pigment which is known to take place under such circumstances. If it can be shown that in some cases of occlusion of the common bile-duct of sufficient standing to allow of the excretion of all absorbed urobilin urobilinuria is still observed, there is no alternative but to admit the existence of a second source. I have never met with such a case, and the only recorded instance of the kind with which I am acquainted is one referred to by Gerhardt of a patient the complete occlusion of whose bile-duct by carcinoma was verified post mortem, who developed hæmorrhagic ascites, and whose urine showed a pronounced urobilin band. It is not stated how long the intestinal contents had been practically urobilin-free at the time of observation. Beck injected blood under the skin of a dog with ligatured common duct and a biliary fistula and found a little urobilin in the bile, very little in the urine, and none in the fæces. Hence he concluded that the possibility of hæmatogenous urobilinuria could not be dismissed offhand, and it is evident that further observations are necessary before the question can be regarded as definitely settled.

Lastly, it is necessary to say something of the clinical aspects of urobilinuria. Increased excretion of the pigment, evidenced by a dark absorption band seen when the urine is examined with the spectroscope, is a very common phenomenon in disease, and we may distinguish between cases in which the band is seen for only a few days in succession and those in which it is present over a long period. A distinction may also be drawn between cases of what may be called "pure urobilinuria" in which a markedly increased urobilin excretion is the only obvious pigmentary abnormality and those in which uroerythrin and hæmatoporphyrin are also present in excess. In febrile disorders of almost every kind temporary urobilinuria may be met with, the duration of which usually corresponds with that of the pyrexia. In diseases of the liver the urobilinuria is usually persistent, as is well seen in cases of cirrhosis, malignant disease, or passive congestion secondary to cardiac or pulmonary troubles. In such cases the urobilin band is apt to be masked to some extent by a general absorption of the violet end of the spectrum due to other pigments. In diseases attended by excessive hæmolysis, and during the absorption of extravasated blood, there is apt to be conspicuous urobilinuria, and unless complications are present there is no corresponding increase of uroerythrin or hæmatoporphyrin. Such urines have a warm orange colour, which is readily recognised by a trained eye, and at the apex of a conical glass a pinkish tinge is usually seen. The occurrence of persistent urobilinuria in pernicious anæmia was first described by Dr. F. W. Mott[35] and Dr. William Hunter,[36] and it supplies a diagnostic sign of real value and affords an indication of the progress of the case. In association with it I have observed a marked excess of urobilin in the fæces. When blood extravasations are being absorbed a temporary urobilinuria is apt to occur in a day or two after the occurrence of the hæmorrhage, and this again may prove of service in the diagnosis of deep-seated hæmorrhages, such as pelvic hæmatoceles. Diminished excretion or absence of urobilin from the urine may be due to diminished formation of bile-pigment, as in chlorosis, phosphorus poisoning, or acute yellow atrophy of the liver; to suspension of urobilin formation in the intestine as in typhoid fever with green stools; as well as to occlusion of the common bile duct. Viglezio[37] suggested that renal permeability has an important influence upon the excretion of this pigment, and it is a clinical fact that albuminuria and urobilinuria very seldom co-exist. There is, moreover, experimental evidence in support of this view. As might be expected all diseased kidneys do not hold back urobilin to the same extent, and Zoja thinks that a parallelism may be traced between its excretion and that of urea. Morfaux,[38] who, with Achard, has recently worked at this subject, states that a kidney which is impermeable to methylene blue is impermeable to urobilin also, and that the more diffusible chromogen may pass through a kidney which does not allow the passage of the formed pigment.

HÆMATOPORPHYRIN.

When we pass to the consideration of urinary hæmatoporphyrin and of the pathological significance of its presence in excess we enter upon comparatively little-trodden ground. Hæmatoporphyrin has been found by MacMunn in the integuments of certain invertebrata, some of which have no hæmoglobin in their blood. Krukenberg and Sorby have shown that it is one of the colouring matters of the shells of birds' eggs, and Tappeiner found it in the bones of certain diseased swine. Pigments very closely resembling it have been obtained by the action of reagents upon substances other than hæmoglobin and hæmatin. Such are the turacoporphyrin obtained by Church from the copper-containing pigment turacin, and phylloporphyrin prepared by Schunck and Marchlewski from chlorophyll. In normal human urine hæmatoporphyrin is present in minimal quantity, as can readily be demonstrated by appropriate methods. In many morbid urines it is found in larger but still small amounts, and under exceptional circumstances, and especially as a result of the administration of sulphonal, it is much more abundantly present in urines which have a deep port wine tint. However, such urines owe but little of their peculiar colour to this pigment. In the fæces it is also present, as Stokvis[39] has recently pointed out, and its presence may be demonstrated by a method employed by Saillet[40] for its detection in urine, the basis of which is extraction with acetic ether after the addition of acetic acid. I have recently made a number of examinations of the solid excreta

[34] La Clinica Medica Italiana, 1898, vol. xxxvii., p. 214.

[35] THE LANCET, 1889, vol. i., p. 520.
[36] Practitioner, 1889, vol. xliii., p. 161.
[37] Lo Sperimentale, 1891, vol. xlv., p. 225.
[38] Loc. cit.; Comptes Rendus de la Société de Biologie, 1899, dixième série, tome vi., p. 50.
[39] Nederl. Natuur-en Geneeskundig Congres, 1899, p. 378.
[40] Revue de Médecine, 1896, tome xvi., p. 542.

by this method and have always invariably found traces of hæmatoporphyrin, comparable with those met with in urine. I have also found that considerably larger amounts of this pigment may be extracted from meconium by the same method, both from that expelled during the first day or two of life and from that removed from the intestines of still-born infants. Stokvis also obtained hæmatoporphyrin from bile. Here its detection is rather less easy and the results which I have obtained with this material have been much less constant. Lastly, in a case of sulphonal poisoning A. E. Taylor and J. Sailer[41] have recently recovered it from blood collected post mortem.

Hæmatoporphyrin yields to no other pigment in the distinctive characters of its spectra, and at least four characteristic groupings of absorption bands serve for its identification under different conditions. However, the amount present in urine is usually so small that the bands are quite invisible on direct spectroscopic examination or are so faint that they can only be recognised by a trained eye. The natural product so closely resembles the artificial product, and especially that obtained by Nencki and Sieber's[42] process, both in its spectroscopic and other properties, that their identity is hardly open to doubt. Certain properties regarded by Saillet as peculiar to the urinary pigment can be shown to be shared by the artificial product, and further evidence of identity is furnished by the nitrogen determinations carried out by Nebelthau[43] on the urinary hæmatoporphyrin from a remarkable case which he observed, which gave results according perfectly with the requirements of Nencki and Sieber's formula. We are, therefore, justified in concluding that the hæmatoporphyrin of the body has hæmoglobin for its parent substance and is isomeric with bilirubin.

Nencki and Sieber suggested that hæmatoporphyrin might represent a stage in the building up of hæmoglobin, basing this suggestion on the fact that when the pigment was injected beneath the skin of dogs the amount excreted in the urine represented only a small part of that which was absorbed from the seat of injection. However, Otto Neubauer has recently offered another explanation of this, and has shown that much of the pigment absorbed is excreted in the bile. Assuming, then, that the hæmatoporphyrin of the body is a product of the downward metabolism of hæmoglobin, and possibly of the histohæmatins of MacMunn, the next question to be considered is whether it is derived from the human blood-pigment or from that introduced in the food. Stokvis[44] holds that part of the hæmatoporphyrin of urine is derived from the food and that even chlorophyll, from which, as has been mentioned, a very closely allied, if not identical, pigment can be obtained, may contribute to its formation. He does not doubt, however, that some is formed from the human tissues. His pupil, Keyser,[45] found that a change of diet from red meat to white meat without vegetables caused the disappearance of the normal trace from the urine, but that it returned when green vegetables were added to the food. However, he only gives a single set of observations extending over a few days, and marked fluctuations of the normal excretion are not uncommon apart from changes of diet. I have myself been unable to notice any appreciable effect of changes from a milk diet to a similar diet with spinach, and afterwards to red meat. However this may be, it is certain that the bulk of the urinary and fæcal hæmatoporphyrin has no such origin. Patients on milk diet excrete hæmatoporphyrin both in urine and fæces, and I may quote the single instance of a boy who was in good health save for a cicatricial stricture of the œsophagus of a year's standing. When on a diet of pure milk this child regularly passed traces of the pigment, and it may also be found in the fæces of suckling infants. Perhaps the most important evidence is afforded by the presence of hæmatoporphyrin in considerable quantity in the ante-natal meconium. On the other hand there is no obviously increased excretion in the urine in cases of gastric hæmorrhage with melæna, unless some other cause be present, such as cirrhosis of the liver.

Seeing, then, that at least the greater part of the hæmatoporphyrin of the body is derived from human sources, it is a natural supposition that its excretion in excess is an indication of increased hæmolysis. There are two ways in which this proposition may be put to the test—viz., by examining the blood in cases in which unusual amounts of the pigment are being excreted and by examining the urine in cases in which active hæmolysis is known to be in progress. Both methods return the same answer—viz., that there is no necessary connexion between excess of hæmatoporphyrin in the urine and excessive hæmolysis. It is only in extreme cases, such as those due to sulphonal, that the quantity of the pigment excreted is sufficiently large to promise any cogent evidence by the first method, and although excessive hæmolysis and hæmatoporphyrinuria may naturally coexist, such evidence of undue blood-destruction as the hæmocytometer affords is usually wanting in these cases. In the case of a female patient observed by Dr. L. R. Oswald[46] three blood examinations during its progress gave figures varying between 3,520,000 and 3,150,000 red corpuscles. Dr. Hotchkiss has kindly sent me the following counts obtained in the course of a case of hæmatoporphyrinuria also due to sulphonal which he has recorded.[47] Red corpuscles: Jan. 5th, 3,600,000; Jan. 6th, 4,044 000; and Jan. 12th, 3,961,000. Dr. J. Purves Stewart also was good enough to make some blood examinations for me in a similar case in the National Hospital for the Paralysed and Epileptic with the following results. April 13th: red corpuscles, 4,560,000; hæmoglobin, 70 per cent. April 17th: red corpuscles, 4,360,000; hæmoglobin, 72 per cent. April 21st: red corpuscles, 4,500,000; hæmoglobin, 72 per cent. April 26th: red corpuscles, 4,560,000; hæmoglobin, 70 per cent. The force of such negative results is not impaired by the occasional coexistence of conspicuous anæmia with urinary change. Mr. F. G. Hopkins[48] has shown, and I have repeatedly confirmed the observation, that in pernicious anæmia, a disease in which hæmolysis is an essential feature, the urinary hæmatoporphyrin is not increased unless complicating conditions are present. In such cases, as we have seen, it is urobilin which appears in abnormal amounts in the urine. Thus one is driven to the conclusion that hæmatoporphyrin is either an intermediate product of metabolism, which normally to some extent, and in many morbid conditions to a larger extent, escapes further change and is excreted as such, or else that it is a bye-product of metabolism which may be formed in undue amount in the place of some other hæmoglobin derivative such as its isomer bilirubin. Whatever be the nature of the process involved it is one which is constantly active to some extent in health and even in intra-uterine life.

Although, like urobilin, hæmatoporphyrin is found alike in the urine, the fæces, and the bile, the quantitative distribution of the two pigments is altogether different. The quantity of fæcal hæmatoporphyrin is quite minute and some of it, at any rate, enters the intestine with the bile. As far as my own observations go there appears to be a parallelism between the quantities in the urine and fæces respectively, increased excretion in the urine being accompanied by an increase in the solid excreta, and *vice versâ*. However, when the common bile-duct is occluded and urobilin disappears from the intestine some hæmatoporphyrin remains, which shows that the bile is not the only source of supply. That the remaining pigment is not derived from food is shown by its persistence upon a diet wholly free from meat and green vegetables. I even found a minute trace of the pigment in the collected solid excreta of several days of an infant, aged four months, with congenital atresia of the bile ducts (afterwards verified post mortem), and who had never had any other diet but milk. One is therefore driven to conclude that some of the intestinal hæmatoporphyrin makes its way into the intestine through its walls. There is clearly no reason to suppose that this pigment has its place of origin in the intestinal canal.

It seems probable, *a priori*, that the liver, which is the seat of the manufacture of bilirubin, is also the organ in which hæmatoporphyrin is formed. Riva and Zoja's[49] clinical observations led them to the opinion that hepatic disorders, functional and organic, are mainly responsible for the appearance of increased amounts of this colouring matter in the urine. Keyser, too, found it to be specially abundant in cases of hepatic disease, and my own observations, extending over a

[41] Contributions from the William Pepper Laboratory, Philadelphia, 1900, p. 120.
[42] Archiv für experimentelle Pathologie und Pharmacologie, 1888, Band xxiv., p. 430.
[43] Zeitschrift für physiologische Chemie, 1899, Band xxvii., p. 324.
[44] Loc. cit.; Zeitschrift für klinische Medicin, 1895, Band xxviii., p. 1.
[45] Ueber Hæmatoporphyrin im Harn, Dissertation, Freiburg, 1897.
[46] Glasgow Medical Journal, 1895, vol. xliii., p. 1.
[47] Brit. Med. Jour., 1898, vol. ii., p. 685.
[48] Guy's Hospital Reports, 1893, vol. l., p. 349.
[49] Gazzetta Medica di Torino, 1892, vol. xliii., p. 423; Archivio Italiano di Clinica Medica, 1893, vol. xxxii., p. 63.

number of years, have led me to exactly the same conclusion. In this connexion the impressions gleaned from the examination of large numbers of cases are really of more value than statistics, for statistics necessarily fail to take into account the contributory factors in individual cases. For example, in valvular heart diseases the amount of hæmatoporphyrin in the urine is often conspicuously increased, but in such cases the increase is closely connected with the amount of passive congestion of the liver, as evidenced by enlargement and tenderness of that organ. In phthisis, too, the marked increase not uncommonly met with has appeared to me to stand in direct relation to fatty degeneration of the liver, either evidenced by enlargement made out during life or seen at post-mortem examinations. Again, fatty degeneration of the liver and occasional cirrhotic change are mentioned by Dr. Thomas Oliver among the more constant effects of lead poisoning, a condition in which, as Stokvis has pointed out, increase of urinary hæmatoporphyrin is well-nigh constant. Nor can the influence of hepatic disorders be excluded in some diseases in which they play no recognised part. In gout, for example, there is usually an excess of urinary hæmatoporphyrin, and on referring to the post-mortem records of St. Bartholomew's Hospital I found that in a series of 50 cases in which uratic deposits were present in the toe-joints some naked-eye change in the liver was noted in no less than 39 In 15 cases the liver was described as fatty, in four as both fatty and cirrhotic, and in six others as merely cirrhotic.

In febrile disorders some evidence of hepatic change, such as "cloudy swelling," is sufficiently common, and in acute rheumatism, the disease in which hæmatoporphyrin in the urine was first detected by MacMunn[50] and in which an increase is very generally observed, it will, I think, be found that hepatic changes, evident on microscopic examination, are fairly constant. Dr. F. J. Poynton has found such changes in some livers which he has kindly examined for me. Once more, in a case of spleno-medullary leucocythæmia in which hæmatoporphyrin bands were visible, on direct spectroscopic examination of the urine, over a long period the liver showed general leukæmic infiltration to a conspicuous degree.

We are not yet in a position to assert that the liver is disordered or diseased in all cases in which hæmatoporphyrin is present in excess in the urine, but the evidence, as a whole, is strongly in favour of the view that its disorders play the chief part in bringing about this result.

That the spleen takes any important share in the process is excluded by the fact that removal of that organ has no obvious effect, either immediate or remote, upon the normal minimal excretion of the pigment. By the kindness of Mr. J. Bland-Sutton and Mr. D'Arcy Power I have had opportunities of examining the urine in three cases of splenectomy, both within a short time of the operation and in one case at long intervals after it. In all three cases the ordinary trace of hæmatoporphyrin was present without noteworthy increase or diminution. It may also be noted that diseases of the spleen are not accompanied by any marked disturbance of the excretion unless the liver is also implicated, as in the case of leucocythæmia referred to above.

The cases of hæmatoporphyrinuria due to sulphonal and those much rarer ones in which similar dark red urines are passed apart from the taking of this drug or its allies call for special consideration. In them we are confronted with something more than a mere exaggerated excretion of hæmatoporphyrin, and, as Hammarsten[51] first pointed out, the peculiar colour of such urines is almost wholly due to other abnormal pigments as yet not studied. The removal of the hæmatoporphyrin from such urines causes little or no reduction of colour and when this pigment is added to normal urine until bands of similar intensity are seen the change of tint produced is comparatively slight. In one such case, not due to sulphonal, I was able to isolate a purple pigment which differed in its properties from any known urinary colouring matter and to which the colour of the urine in question was obviously in the main due. There is, indeed, in these cases a profound disturbance of pigment metabolism and even the more familiar pigments present in such urines are apt to exhibit peculiarities of behaviour. It is worthy of note that in sulphonal cases fatty degeneration of the liver has been repeatedly observed, and Taylor and Sailer state that in their case the most conspicuous anatomical changes were found in the liver, which showed widespread degeneration of the hepatic cells, the nuclei of which exhibited advanced degenerative changes and their protoplasm refused acid stains. Glycogen was reduced to a trace and small foci of necrosis were scattered through the tissue. Stokvis was able to produce a degree of hæmatoporphyrinuria in rabbits by the administration of sulphonal, and this observation has recently been confirmed by Otto Neubauer[52] who also found the pigment in the bile of the animals. He was unable to detect it in the blood or any organ except the liver, in which it was constantly present, but he suggests that its presence there may be due to an excretory action of the gland and not necessarily to its formation *in situ*. On the other hand, it is difficult to ascribe all the phenomena of such hæmatoporphyrinuria to hepatic changes, seeing that changes of like degree may occur without any conspicuous urinary abnormality, and there is still much that is mysterious in this condition. Stokvis was inclined to ascribe the increased excretion in lead poisoning and the far greater increase in the sulphonal cases to hæmorrhages into the mucous membrane of the alimentary canal, the conversion of the blood-pigment into hæmatoporphyrin being favoured by sulphonal. In rabbits poisoned with the drug he found hæmorrhagic areas in the stomach walls which showed the spectrum of acid hæmatoporphyrin by transmitted light. He also found that when fresh blood was digested with pepsin, hydrochloric acid, and sulphonal at from 38° to 40° C. hæmatoporphyrin was formed in small amount, but Kast and Weiss[53] and Otto Neubauer have failed to obtain this result. Intestinal hæmorrhages have certainly been described in some sulphonal cases, but in others they have been looked for in vain, and very extensive extravasations would be necessary to produce the observed excretion.

In the cases in which dark red urine is passed by patients who have not taken sulphonal the significance of the symptom is apparently not so grave and pathological data are wanting. In no two of the few recorded instances have the morbid conditions present been similar, the patients having suffered from such diverse maladies as phthisis, exophthalmic goitre, typhoid fever, and hydroa æstivalis. Perhaps the most remarkable case is that of Nebelthau, in which a female patient the subject of congenital syphilis had passed dark red urine as long as she could remember and continued to do so whilst under observation. No similar instance of such persistence of hæmatoporphyrinuria has hitherto been placed on record.

UROCHROME.

Of the remaining members of the group, urochrome and uroerythrin, our knowledge is as yet too imperfect to allow of the framing of definite theories of their modes of origin or of the conditions which control their excretion. As has already been mentioned, Dr. Thudichum,[54] who for a long time stood almost alone in maintaining the existence of urochrome as a definite chemical individual, holds that this, the most abundant of the urinary pigments, has no chemical relationship with either hæmoglobin or bilirubin. Urobilin, too, he regards as merely a decomposition product of urochrome, identifying it with omicholic acid, with his analyses of which substance our analyses of urobilin certainly show a very close agreement. The relationship of urobilin to the pigments of the blood and bile appears to me to admit of no doubt, nor can I accept the view that the urobilin of urine is formed by the decomposition of urochrome. Granting that it is possible to obtain from urochrome a product having the main properties of urobilin, this fact appears to me rather to afford evidence that to urochrome itself a place must also be assigned among the derivatives of hæmoglobin.

By acting upon urochrome with acids, in strict accordance with Dr. Thudichum's directions, I have not succeeded in obtaining any product showing the urobilin band or yielding the well-known fluorescence with zinc chloride and ammonia; but a substance having both these properties is readily obtained by the action of aldehyde upon an alcoholic solution of this pigment.[55] In a short time—shorter still when the liquid is warmed—an absorption band appears like that of urobilin, and the tint of the solution deepens to a

[50] Proceedings of the Royal Society, 1880, vol. xxxi., p. 211; Journal of Physiology, 1889, vol. x., p. 71.
[51] Skandinavisches Archiv für Physiologie, 1891, Band iii., p. 319.
[52] Archiv für experimentelle Pathologie und Pharmacologie, 1900, Band xliii., p. 455.
[53] Berliner klinische Wochenschrift, 1896, Band xxxiii., p. 621.
[54] Brit. Med. Jour., 1864, vol. ii., p. 509; Virchow's Archiv, 1897 Band cl., p. 586, and 1898, Band cliii., p. 154.
[55] Journal of Physiology, 1897, vol. xxi., p. 190.

rich orange-yellow. With zinc chloride and ammonia a brilliant green fluorescence appears, and the band is shifted towards red, as that of urobilin is under like conditions. The process can be stopped at this point by the simple addition of water, for aldehyde has no such action upon aqueous solutions of urochrome. If, however, the action be allowed to continue a further change ensues; the liquid reddens and a second band appears in the violet. The fluorescence can still be obtained with zinc chloride and ammonia, and both bands are shifted towards red and are closer together than before. This reaction with aldehyde affords a very delicate test for the presence of urochrome in alcoholic solutions. The product of the earlier stage, although it is not identical with urobilin, resembles that pigment quite as closely as the products obtained from bilirubin and hæmatin by the action of reducing agents; but no second band is developed when aldehyde is added to an alcoholic solution of urobilin. On the other hand, by the action of potassium permanganate upon urobilin Riva and Chiodera[56] obtained a substance closely resembling urochrome, and a similar product is formed when an aqueous solution of urobilin containing ether is evaporated upon a water bath. Neither product shows any absorption band and both behave as urochrome does when it is acted upon by aldehyde. Riva and Chiodera also detected the presence of urochrome in fæces and in serous effusions, and its presence in both may readily be demonstrated. I have found that the most satisfactory method for its detection in fæces is to extract with a saturated solution of ammonium sulphate, which takes up neither urobilin nor its chromogen. From the yellow extract so obtained the urochrome can be separated with alcohol in the ordinary way,[57] and precipitated from alcoholic solution by ether. Its identity can be established by means of the aldehyde reaction. As judged by the colour the quantity obtained is small and there is no relative excess in the intestine, as in the case of urobilin.

When ascitic fluid is saturated with ammonium sulphate the serum pigment is all thrown down with the last of the proteid precipitate, and from the almost colourless filtrate alcohol extracts a minute amount of a yellow pigment, which yields the aldehyde reaction of urochrome. Riva's[58] suggestion that some of the urobilin absorbed from the intestine may be converted into urochrome in the tissues is in part based upon the scanty pigmentation of the urine of young infants and in part upon the almost complete decolourisation of the urine of a patient with obstructed bile duct, when the bile-pigment was removed by means of baryta mixture. The case or cases which he observed were certainly exceptional in this respect, for in the urine of several patients with occlusion of the bile duct which I have examined I have never failed to find abundance of urochrome present after similar treatment. Vitali has had the same experience, and it is a well-known fact that in cases of biliary fistula, with occluded duct, the urine is not decolourised even after it ceases to contain bile-pigment. Moreover, urochrome is present in the urobilin-free fæces and even in those of infants with congenital atresia of the ducts. One is, therefore, driven to conclude that the formation of urochrome is quite independent of that urobilin, and although it is probably a derivative of hæmoglobin there is as yet no evidence to show how or where it is formed. It may be mentioned as a negative point that the excretion of urochrome is not obviously affected by removal of the spleen.

Clinical evidence bearing upon this question is at present wholly wanting, and although there can be little doubt that the excretion of urochrome is subject to wide fluctuations apart from the apparent variations due to concentration or dilution of the urine, we know nothing of the conditions under which they occur. The pigment has no characteristic spectrum and the want of a satisfactory method for its estimation makes it difficult to form even a rough notion of the quantity present in morbid urines, in which its colour is so often masked by that due to other pigments.

UROERYTHRIN.

Of the mode of origin and the relationships of uroerythrin we know even less, notwithstanding that its power of imparting a pink colour to urate sediments renders its detection extremely easy and caused it to be the first of all the urinary pigments to attract individual attention. Uroerythrin is a potent colouring matter, far excelling urochrome and urobilin in this respect, so that the presence of even a small amount has a conspicuous effect upon the tint of the urine in which it is contained. The peculiar reddish-orange colour of the pigment in solution contrasts strongly with that of the pink urate sediments, in which it probably exists in combination, for they show a characteristic spectrum of their own.[59] In its properties uroerythrin differs widely from the pigments which we have hitherto been considering. The most conspicuous of these is its extreme instability, and compared with it urobilin and hæmatoporphyrin are quite stable compounds. Its solutions in alcohol or chloroform are very rapidly decolourised by light, and even when kept in the dark quickly undergo change. Alkalies destroy the pigment readily, with the production of a green tint. Neutralisation of the alkali does not restore the original colour or bring back the absorption spectrum, which is characteristic though ill-defined, consisting of two feeble bands in green and blue united by a feebler shading. One of these bands has the position of the urobilin band, but both alike disappear when the solutions are decolourised by light. These properties suggest that uroerythrin is a pigment of a different order from those which we have hitherto considered and that it is probably not a member of the family of hæmoglobin derivatives. There is, however, little to guide us in this matter and C. E. Simon[60] quotes an estimation of the carbon and hydrogen in uroerythrin which is suggestive of a relationship to bilirubin, but he gives no particulars. Hitherto this pigment has only been found in urine and there is no evidence that it is excreted in the form of a chromogen. On the other hand, it may fairly be doubted whether a substance so readily destroyed by alkalies can exist as such in the alkaline body fluids. I have sought for it in the fæces of patients in whose urine it was abundantly present by several methods, such as extraction with amylic alcohol and acetic ether, both excellent solvents of uroerythrin; by shaking water extracts, acidified with acetic acid, with amylic alcohol, and by precipitation of crystalline uric acid in watery extracts. All of these methods have failed to reveal its presence and although some method as yet untried may reveal traces it can hardly be present in any considerable amount in the solid excreta.

Although uroerythrin is probably not a strictly normal constituent of urine it may appear in connexion with most trifling deviations from the standard of health. Heller[61] regarded it as the commonest of all abnormal ingredients of urine, and uratic sediments are not often entirely free from a pink tint which may, however, only be visible after their removal by filtration. Such knowledge as we possess of its pathological significance is entirely derived from clinical observation and points to disturbances of the hepatic functions as the prime causes of the increased excretion of uroerythrin. Urines which throw down intensely pink uratic sediments or have the fiery orange colour indicative of much uroerythrin in solution are most frequently passed by patients with definite hepatic diseases such as cirrhosis, carcinoma, or the passive congestion resulting from cardiac lesions. It is true that this pigment is often excreted in large amount in certain febrile disorders, such as acute rheumatism and pneumonia and also in gout, and when associated with an undue excretion of hæmatoporphyrin it affords additional evidence of the implication of the liver. In typhoid fever a large excretion of uroerythrin is exceptional and its occurrence has been connected with pulmonary complications. Riva has made the interesting observation that in such diseases as cirrhosis hepatis the excretion of uroerythrin, as also of urobilin, is much diminished when the patient is put upon a milk diet. In nephritis uroerythrin is seldom found in the urine, but I have seen in a case of pneumonia an abundant excretion of this substance accompanying conspicuous albuminuria.

If uroerythrin in urine is always indicative of hepatic disorder it is clear that not only actual disease of the liver, but even functional disturbances of the slightest description, such as may be supposed to result from trifling errors of diet or may accompany a dyspeptic attack, suffice to bring about its appearance.

Although, as we have seen, the liver plays so important a part in connexion with the pigmentation of the urine, the various morbid changes to which that organ is liable have somewhat different effects upon the excretion of the several

[56] Archivio Italiano di Clinica Medica, 1896, vol. xxxv., p. 505.
[57] Proceedings of the Royal Society, 1894, vol. lv., p. 394.
[58] Gazzetta Medica di Torino, 1896, vol. xlvii., No. 12.
[59] Journal of Physiology, 1896, xvii., p. 439.
[60] Clinical Diagnosis, third edition, 1900, p. 428.
[61] Archiv für Chemie und Microscopie, 1853-54, p. 361.

pigments, and it is probable that a more detailed study of these effects would supply further diagnostic indications. However, in this review of a somewhat obscure branch of chemical pathology nothing has been further from my desire than to claim for my subject an exaggerated practical importance or to suggest that the investigation of the urinary pigments should form part of the routine of clinical examination. Such importance as the subject possesses is derived from the light which it throws upon processes which are at work in the body both in health and in disease, and especially upon those which are concerned with the disposal of effete blood pigment. Nevertheless, in certain cases the examination of the colouring matters of the urine may afford information of real diagnostic value and which is not readily obtained in other ways. It may therefore be fairly claimed that their study is one which is not simply and solely of academic interest.

A Clinical Lecture

ON

EMPYEMA FOLLOWING LOBAR PNEUMONIA

Delivered at Guy's Hospital on June 27th 1900,

BY W. HALE WHITE, M.D., F.R.C.P. LOND.,

PHYSICIAN TO, AND LECTURER ON MEDICINE AT, THE HOSPITAL

GENTLEMEN,—Most patients suffering from lobar pneumonia either recover or die without any complications, but among those few in whom complications follow there are none for whom you can do more than for those who suffer from empyema. A few years ago Dr. Chaning Pearce helped me to abstract several cases from our medical reports; lately my clinical assistants, Mr. F. W. Goble and Mr. B. W. Moss, kindly abstracted some more, and I have abstracted some myself. Altogether there are 45. 15 of these were under my care and for permission to refer to the others I am indebted to my colleagues. The results are shown in the following table:—

—	1898	1897	1896	1895	1894	1893	1892	1891
Total number of cases of lobar pneumonia in Guy's Hospital ...	122	115	114	100	67	182	88	108
Number of cases of pneumonia complicated by empyema	3	7	3	6	2	9	2	6
Percentage complicated by empyema	2·46	6·08	2·63	6·0	3·0	4·94	2·27	5·5

—	1890	1889	1888	1887	1886	1885	1884	1883
Total number of cases of lobar pneumonia in Guy's Hospital ...	88	60	43	72	48	39	26	69
Number of cases of pneumonia complicated by empyema	1	1	1	2	—	—	1	1
Percentage complicated by empyema	1·13	1·6	2·3	2·9	—	—	3·8	1·4

If we divide this period of 16 years into two equal periods we find that in the eight years 1891–98 there were 896 cases of lobar pneumonia, of which 38, or 4·24 per cent., had empyema, while in the eight years 1883 to 1890 the total number of cases of pneumonia was 445, among which there were seven cases, or 1·57 per cent., of empyema. Thus we see that both relatively and actually the number of cases of empyema due to pneumonia has increased of late years, and the rarity of this complication a few years ago explains the fact that in many text-books published then it was not mentioned that empyema was a complication of pneumonia, and it also goes to confirm what I think experience tells us—namely, that pneumonia is a more severe disease than it was; indeed, pneumonia has, since influenza appeared, become much more formidable than formerly, for not only do these figures prove that the number of admissions for pneumonia have been very great during the last eight years, but the frequency of empyema has increased. There is very little doubt that these figures understate the number of cases of empyema following lobar pneumonia, for it is almost certain that some of the patients who are admitted for pus in the chest have had pneumonia shortly before they came into the hospital. Only recently a man was under my care for empyema which was opened. He died very shortly after the operation and pneumonia was found at the post-mortem examination. Had he recovered we should not have known that his empyema was consecutive to pneumonia. Another reason which makes it impossible to give precisely the proportion of cases of pneumonia which are followed by empyema is that the pneumococcus may be the means of setting up an empyema, even although it does not induce pneumonia, and in such a case the general symptoms and physical signs may be such that it is very difficult to deny certainly the presence of pneumonia. I have seen three or four cases illustrating this point; perhaps the best is that of a man who was under my care but whose case is recorded by Dr. J. W. Washbourn in the Transactions of the Royal Medical and Chirurgical Society, vol. lxxvii. The patient was aged 36 years; his illness was ushered in by a rigor, he had persistent high temperature, rapid breathing, cough, herpes, and delirium. His general aspect was so like that of a patient suffering from pneumonia that both the medical registrar and I pointed him out to the students as having the exact appearances of a patient suffering from pneumonia. The physical signs were until the day before death those of solid lung—viz., loud bronchial breathing, bronchophony, dulness, and consonating râles. Not until the day before death did signs of fluid appear at the base of the lung. At the necropsy the lung was normal both to the naked eye and the microscope, 54 ounces of pus were found in the chest, and this was proved by microscopical examination, by cultivations, and by inoculations to contain no micro-organisms but pneumococci. It is of great interest to notice that such cases as these remind us that although the pneumonia due to the pneumococcus does lead to a pulmonary abscess, yet the same micro-organism may do so when it invades other parts of the body.

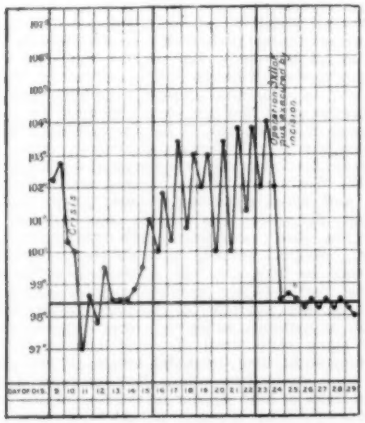
We see, therefore, that it is impossible to state with accuracy the percentage of cases in which pneumonia is followed by empyema, but it is interesting to note that out of 325 consecutive cases of empyema in the medical wards of Guy's Hospital there were 41, or 12·6 per cent., in which it appeared that the empyema followed a lobar pneumonia. But although this is so, it is easy by systematic examination of the pus to find out the proportion of cases of empyema due to the pneumococcus. I have not searched through all our records to find the exact proportion, for several authors have published results from which it appears that the pneumococcus is a very common cause of empyema, probably the commonest, that it is especially common as a cause in children, some considering that 75 per cent. of all empyemata in children are due to it.

Perhaps the best way to consider the subject is to see what we can learn from the 45 cases of empyema following upon lobar pneumonia which occurred in Guy's Hospital from 1883 to 1898 and to check the knowledge thus gained by the patients now in the hospital and one who has recently died.

By far the most important aid to diagnosing that empyema has followed pneumonia is the temperature. The usual thing, if empyema follow, is for the temperature to fall when the crisis takes place, for it to remain down two or three days, for it then to rise again, so that it soon becomes from 2° to 4° or 5° above normal in the evening and about 1° or 2° in the morning; this continues until the pus is evacuated. Chart 1, taken from a patient under the care of Dr. Frederick Taylor, shows this admirably. Sometimes the apyrexial interval is only one day, sometimes it is four or five days, and sometimes there is not strictly an apyrexial interval, for the temperature does not fall at the crisis to normal, but only to nearly normal, and then soon begins to rise again, so that instead of an apyrexial interval we have an interval of lower temperature. There is a fall of temperature at the pneumonic crisis with a subsequent rise in about a third of all the cases in which empyema followed pneumonia. This fall of temperature is a very curious phenomenon, for we believe the pneumonia to be due to the pneumococcus and the empyema to be due to the same micro-organism, and that it is in some way responsible for the pyrexia; that being so it is difficult to understand why, although these micro-organisms are constantly present, there should be

any fall of temperature, for there may be a well-marked crisis with an apyrexial interval before the onset of the temperature indicating empyema even in cases in which the pus from the empyema contains no micro-organisms save pneumococci. Also it is difficult to understand why, when the

CHART 1.

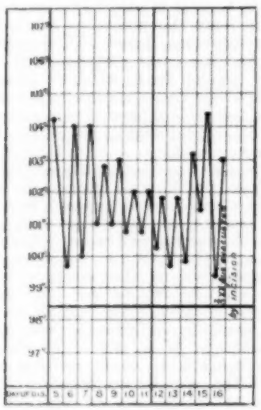


Showing the most common course of the temperature in empyema after pneumonia.

temperature is indicative of the invasion of the lungs by pneumococci, the daily variations should not be extreme, but when the same micro-organism subsequently causes empyema the daily variations should be great.

In many cases there is no apyrexial interval and probably in some of these pus is present from quite early in the illness. Chart 2, from a patient under the care of

CHART 2.

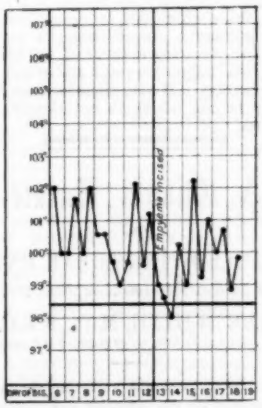


Showing the temperature from a pneumonic empyema without any apyrexial interval.

Dr. Taylor, shows very well a case in which there was no interval during which the temperature fell. You must be particular to bear in mind that there is no sharp boundary line between the two groups, for the temperature may fall a little about the end of the first week, but the fall may be so slight that it is impossible to say whether it represents a crisis modified by the presence of pus.

There is a third group in which also there is no interval during which the temperature is lower, but in which there is some complication present that may well explain this. Pericarditis and malignant endocarditis may both of them be associated with empyema after pneumonia and if they are present early in the case they may prevent the fall. Chart 3 represents the temperature of a boy now in John Ward under my care and as in his case there is pericarditis as well as empyema it is probable that this explains why he did not have a more definite crisis and why

CHART 3.

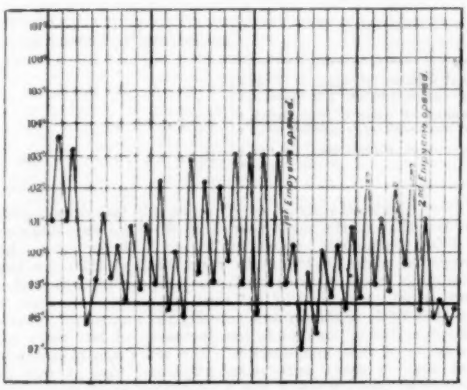


Showing that if pericarditis is present the opening of the empyema may hardly influence the temperature.

even when the empyema was opened the temperature did not fall. It is noteworthy that although pericarditis is a common complication of pneumonia and five of our cases of empyema had pericarditis, yet pyopericardium is so rare. Only one of our 45 cases showed it, and in this case, which was not diagnosed during life, 23 ounces of pus were contained in the pericardium and 12 ounces in the right pleural cavity. Although the empyema in the little boy (Chart 3) now in John Ward lay against the pericardium and he had pericarditis there is no evidence that he has had pyopericardium. Pus in the pericardium from any cause is very rare. I think we have only had six instances at Guy's Hospital in 11 years.

Three of our 45 cases developed pneumococcal malignant endocarditis; in one of them, although there was no lesion of

CHART 4.



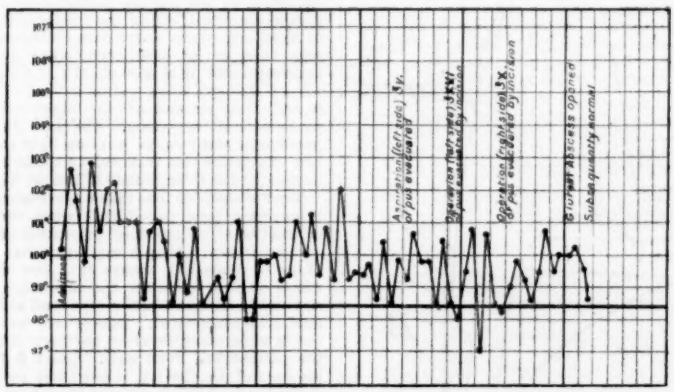
Showing the temperature in a case in which two empyemata were opened by incision.

the valves, there was general infection as shown by the presence of infective aneurysms. In a fourth case there was a pneumococcal gluteal abscess and in a fifth there was pneumococcal inflammation about the ankle. It is obvious that any of

these will mask the temperature due to the empyema. There really appears to be no part of the body in which the pneumococcus may not flourish; you know it will cause meningitis, peritonitis, and arthritis. In very rare instances there are two empyemata, then although the first is operated upon the temperature does not fall permanently until the second is opened. Chart 4, from a patient under the care of Dr. E. C. Perry, shows this very well, and Chart 5, from a patient under the care of Dr. P. H Pye-Smith, shows a case in which there was a post-pneumonic empyema at each base made out that rapidity of respiration is much help in diagnosis, but there is some slight evidence that when the empyema is due to the pneumococcus the respiration may occasionally be more rapid than either the fluid or the temperature would lead us to expect.

Let us now pass on to the examination of the chest, and in the first place let me direct your attention to the great importance of local tenderness. Very often people with deep-seated small abscesses have one spot pressure upon which with the finger gives rise to a slight feeling of pain.

CHART 5.



Showing the course of the temperature in a case in which a double empyema and gluteal abscess existed.

and an abscess in the gluteal region, and it was not until all had been opened that the temperature fell.

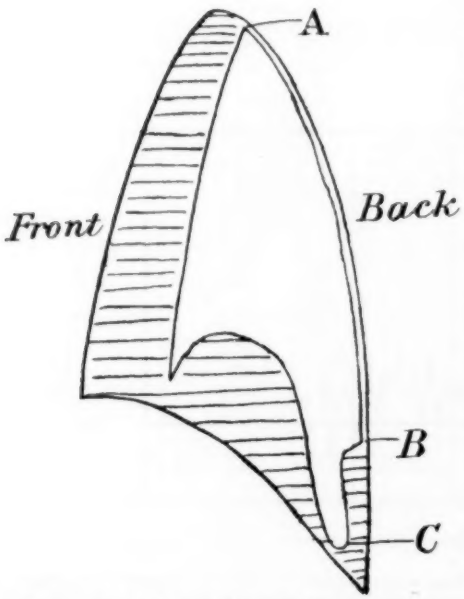
Although the study of the temperature is most important in helping you to diagnose an empyema following pneumonia it is not an infallible guide, for in the first place the temperature may remain up for some time and yet no pus be present. Crisis occurs in only about half of all the cases of pneumonia and when there is no crisis the temperature sometimes falls irregularly and tediously; this is well exemplified by a boy now in No. 3 bed, John Ward. Usually such temperature receives no explanation from the condition of the patient, but it is to be noted that these irregular unexplained temperatures which may, especially in children, follow upon pneumonia do not often show the considerable daily range which is so suggestive of pus, but, on the other hand, as we shall see directly, pus may be present without any wide daily range. Sometimes the persistent temperature after pneumonia is due to some other complication—e.g., malignant endocarditis—and not to empyema, or it may be due to some associated disease such as typhoid fever. Again, particularly in children, it is very difficult always to tell lobar pneumonia from broncho-pneumonia, and in this the temperature may remain up irregularly for a long time, or pyrexia may be caused by quite a small empyema which is coughed up and never detected. In the second place, an empyema in quite exceptional cases follows pneumonia with little or no rise of temperature to reveal its presence. In one of our 45 cases the temperature slowly fell to normal, but the signs of a localised collection of fluid below the left clavicle remained and an exploring needle revealed a localised empyema. In a patient under my care pneumonia was complicated with pericarditis. The patient was taken ill on Sept. 23rd; by Oct. 15th she was much better, but from then till Nov. 6th her temperature was usually raised a degree in the evening. From Nov. 6th to the 12th it was about 101° F. in the morning and 103° or 104° in the evening. A small empyema containing four ounces of pus was found. Perhaps in this case the empyema had been present all the time, although for three weeks the temperature was only raised a degree. In another patient, whom some of you saw not long ago, there were two or three pints of pus, but the temperature was usually only between 99° and 100°. I have carefully compared the respirations in several cases, but I have not

Such a spot, if present, should be chosen for insertion of the exploring needle and may enable you successfully to find pus that would otherwise probably have been missed. I have seen attention to this lead to the discovery of a small suppurating hydatid, small subdiaphragmatic abscesses, and small localised empyemata.

There is little to be said about the physical signs. Pus gives the well-known signs of fluid, but nothing taxes the skill and experience of a physician more than the detection of small empyemata, for they are often surrounded by a thick layer of lymph and they have much solid lung in their neighbourhood. The smallest post-pneumonic empyema I have detected during life only contained half an ounce of pus and it is common for them to hold only three or four ounces. Sometimes it is the absence of air entry, sometimes it is the percussion note, and sometimes it is the absence of bronchophony that particularly guides you. In some cases the difficulty is greatly increased by the fact that the empyema is localised and deep in the chest; thus I have seen it sub-diaphragmatic and I have seen it between the lobes of the lung. There is at the present moment a boy in John Ward (No. 14) whose widely oscillating temperature following upon an ordinary attack of pneumonia makes it almost certain that he has an empyema. When we examine the chest we find that signs suggestive of fluid can be obtained just against the vertebral border of the scapula when it is well dragged forward, but there are none in the axilla. We have repeatedly tried, and always failed, to reach this empyema with an exploring needle. Probably it is a small one well under the scapula and perhaps between the lobes of the lung. Twice I have known a small empyema successfully and easily found with an exploring needle, although when later the patient has been under the anæsthetic the surgeon has failed to find it till he has made nearly 20 punctures, and I have seen small empyemata in the post-mortem room which had during life been missed, although the exploring needle had been inserted many times. There is no royal road to finding them—the only thing is to take an infinitude of pains. One reason why they are so difficult to discover is that as often as not adhesions shut off the pus in irregularly-shaped cavities. The most striking instance I have ever seen of these adhesions is that of a man who was admitted into Philip Ward last March. (See Fig. 1.) He gave a history of two years' illness and said

that he had been worse lately, but even when questioned would not admit that he had been suddenly taken ill or had had a rigor. His temperature varied between 99° and 100° F., he had much diarrhœa and albuminuria, and he was anæmic and hectic-looking. Both sides of his chest moved equally.

FIG. 1.



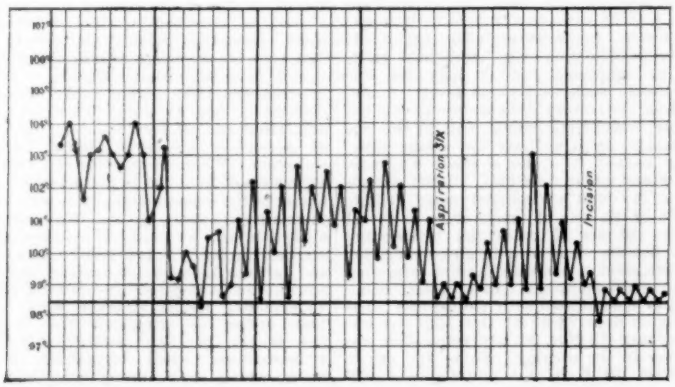
A diagram of an antero-posterior section through the left chest, showing the shape of the empyema which is indicated by horizontal lines. From A to B the lung was firmly adherent to the chest wall. From B to C it was compressed. Most of the rest was pneumonic.

The left side was dull in front with a poor air entry, behind it was also dull with a poor air entry and some bronchial breathing. Below the tenth rib base it was especially dull, so that I inserted a needle in the tenth space and withdrew pus; and in order to prove that the whole of the dulness behind was not due to fluid I inserted the needle again in the ninth and eighth spaces without obtaining any pus. There was a loud pleuritic rub and some rhonchi on the right side. I concluded that the case was one of phthisis with a tuberculous empyema at the base of the left lung and finally decided to open it. About four pints of pus gushed out and the patient died very shortly afterwards. We found that he was suffering from a huge post-pneumonic empyema, for the left lung was still in a state of grey hepatisation. The empyema had commenced apparently between the base of the left lung and the diaphragm and strong but recent pleuritic adhesions running vertically down in and behind the mid-axillary line had localised it so that it spread up the front of the chest right up to the clavicle but only up the back as far as the tenth rib. The diagram shows an antero-posterior section through the left chest. Had we known that there was so much pus it would have been wiser to slowly aspirate before opening the chest, for probably the sudden taking away of all that fluid from around the heart led to the sudden death. It is interesting to note that there was a small abscess in the lung. I have seen that in at least one other case of pneumococcal empyema, and it is also worthy of note that although there was all this pus there was no œdema of the chest-wall, for it is said that œdema of the chest-wall never occurs with pneumococcal empyema. The pus that is let out of these pneumonic empyemata is often light green and very thick; you can notice this very well in the little boy in John Ward; he coughs out thick pellets of almost solid greenish pus.

Much discussion has taken place about the treatment, for it has often been stated that when the pus contains a pure cultivation of pneumococci aspiration will suffice and incision is unnecessary. Simple aspiration has been tried in several of our 45 cases, but always in a few days the temperature, which at first fell after the aspiration, has begun again to rise and to assume a hectic type, and at the same time signs of fluid have reappeared. One or two very bad cases have died, but in most cases the chest has been ultimately laid open and the patient has done well. Chart 6, from a patient under the care of Dr. Taylor, shows these points admirably. Two patients who have been aspirated have refused to submit to any further operation and have consequently gone out of the hospital. One we have fortunately been able to trace and Mr. Moss kindly visited him at his home and reports that he is now quite well and that his chest seems healthy, although no incision has been made into it. His chart is No. 7. He was admitted under my care for pneumonia on Oct. 16th, 1897, and subsequently was under the care of Dr. Pye-Smith. Five ounces of pus were withdrawn on Nov. 20th. The temperature fell but soon began to rise again, so six ounces were withdrawn on the 28th. Again the temperature fell, but in a few days it rose again and showed wide daily fluctuations, and as he would not have anything more done he left on Dec. 12th, 1897—that is, two and a half years ago. Whether he has coughed up a small empyema it is impossible to say. In none of our cases did a single aspiration suffice to stop the pyrexia and formation of pus, although in some cases—as, for instance, that from which Chart 6 is taken—it was proved that the pus contained no organisms except pneumococci.

So we may conclude from our experience at Guy's

CHART 6.

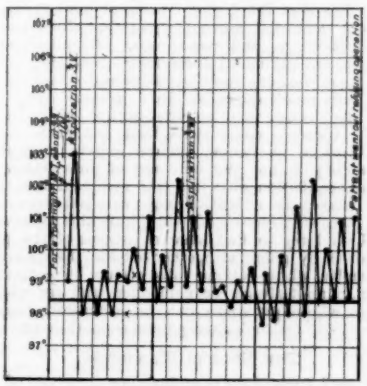


Showing the temperature in a case of post-pneumonic empyema which was aspirated and subsequently incised.

Hospital that it is very unlikely that simple aspiration will cure any case of pneumococcal empyema; still it must be remembered that a certain number of cases have been recorded in which it has appeared to be curative. It seems to me that if the empyema is small it is wiser to evacuate it by incision, for if aspirated probably it will a week or so later have to be incised, and as it is small and will soon heal up it may as well be incised at once. Also, if the empyema is a large one it is better incised (first of all slowly letting out the pus to prevent cardiac failure), for the patient is seriously and dangerously ill and therefore it is not right to prolong his illness by aspiration, as that will almost certainly have to be followed by incision in a week or so. Still, in certain cases in which the patient is not very ill and much objects to an anæsthetic or to an operation, you may at his wish try simple aspiration if the pus withdrawn by the exploring needle gives a pure cultivation of pneumococci. It is said that children recover more often with simple aspiration than adults.

Turning next to the prognosis I find that among our 45 cases 13 died, giving a mortality of almost 29 per cent.

CHART 7.



Showing the temperature in a case of post-pneumonic empyema which was aspirated twice.

This is considerably higher than that given by some authors, but then it must be remembered that children—in whom the prognosis is most favourable—often go to a children's hospital, so that a large general hospital does not get a fair proportion of patients under 10 years of age, and further, four of the 13 had signs of general infection as shown by malignant endocarditis or infective aneurysms, and two were instances of pneumonia occurring in those patients who were already the subjects of phthisis. If we deduct these six cases we get a mortality of seven among 39 cases, or about 18 per cent. The mortality among patients suffering from pneumonia varies widely in different years. Thus at St. Thomas's Hospital[1] in 1887 it was 35 per cent. in the latter half of 1888 and in the first nine months of 1889 it was 9 per cent, and in 1892 it was 7 per cent., but in January and February when influenza was rife it was 64 per cent. It is thus impossible with the figures at our disposal to say how far the danger to life is, in pneumonia, increased by empyema, but certainly the extra danger is not very great. In one of the cases of empyema with malignant endocarditis this was more marked on the right side of the heart than on the left, suggesting that the infection had taken place from the pleura by means of the azygos veins.

It has been stated that recovery usually follows when a pneumonic empyema bursts into the lung, and our series contains a very striking case which goes to support this view. A very feeble man, aged 72 years, was admitted under the care of Dr. J. F. Goodhart suffering from pneumonia. An empyema formed at the base of the right lung; five ounces of pus were let out by incision, but the patient was no better; a few days later he coughed up several ounces of pus by the mouth; he at once began to mend and made an excellent recovery. I have also seen a patient whose case is not included in our series cough up a post-pneumonic empyema and get perfectly well, and I am afraid that we must leave the boy in John Ward, whose empyema is probably deep-seated somewhere under the scapula, to get well in the same way; indeed, if it is deep between the lobes of the lung probably he will get better more quickly if he coughs it up than if we find it and open it.

The amount of pus found in these empyemata is most variable; 170 ounces were present in one of the patients who had malignant endocarditis. The rate at which it is poured out must be great, for if in the cases in which 80 and 72 ounces were respectively found we believe that the formation of pus began with the onset of the pneumonia at least five ounces must have been formed daily, and if we consider that the pus did not begin to be formed until the secondary rise of temperature began the rate of collection must have been half a pint a day. In striking contrast to these is the case already mentioned in which only half an ounce was found, although 24 days had elapsed since the secondary rise began. Rapid as is the rate at which pus may collect in the chest there is no evidence that it can collect at the rate at which clear fluid may be poured out, for I have recorded a case in which over 100 ounces of this were secreted in one and a half days.[2]

[1] St. Thomas's Hospital Reports, vol. xix.

[2] THE LANCET, March 25th, 1893, p. 649.

An Address

ON

THE PHYSIOLOGY AND PATHOLOGY OF INHERITANCE, OR WHAT DO WE INHERIT FROM OUR PARENTS?

A Lecture Introductory to a Course of Clinical Medicine delivered in the Newcastle-upon-Tyne Royal Infirmary on Oct. 31st, 1900,

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GENTLEMEN,—From a biological point of view "we are the heirs of the ages." Not only in the sense that we are participators of the accumulated experience of the race, but in the physical and mental endowments that belong to each of us, do these words find scope for their realisation. Studying together, as we shall this winter, clinical medicine, it has seemed to me that the present is not an inopportune time to draw your attention to some of the less frequently discussed problems that underlie human life in health and disease. If I can show you that disease is not a morbid entity, requiring to be diagnosed and treated, but something more, and that into our conception of disease there must enter, in addition to the symptoms complained of and the physical signs of ill-health, knowledge of the individual with his peculiarities of constitution, his susceptibilities, his age and his occupation—in a word, that it is not disease as disease, but the individual with his malady that requires treatment—the time at our disposal will not have been misspent.

Disease, from the words "dis" and "ease," simply means want of ease. In health all our organs functionate without impressing themselves upon our consciousness, but in disease we are often too painfully aware of their existence. It was the opinion of the ancients that disease depended upon a chemical change in the humours of the body, and so for a period the humoral pathology prevailed, remnants of which are still seen in the nomenclature of disease. Later disease was thought to be due to a distinct and tangible cause, a *materies morbi*, while subsequently to this it was regarded as the last link in a chain of processes of deranged metabolism and abnormal function with diminished resistance to external surroundings. Within the last two decades, owing to the great strides made by bacteriology—a science

which has shown that many diseases, especially those of an infectious nature, and even others that are not appreciably infectious, are due to the entrance into the system of microbes—medical opinion as to the cause of disease has veered round to a belief in the existence of a *materies morbi*. Even here there is danger in being too exclusive. Admitting that tuberculous disease, for example, is bacillary and that there is no tubercle without Koch's bacillus, and also that pneumonia and erysipelas are equally caused by micro-organisms, it is for us to consider whether other factors are not in operation and to assign to each its respective rôle.

Leaving out of consideration congenital affections and deformities, or those abnormal conditions with which a child is born attributable to circumstances operating directly upon the fœtus in utero, as in congenital syphilis, I shall deal with those individuals who are born presumably healthy and yet in whose system there are such refinements of structure and deviation from the normal that as time goes on life is brought prematurely to a close by disease similar to that from which one or both parents perhaps died, or during whose lives there are exhibited traits of character or peculiarities of temper and of disposition that recall the life of the parent or of an earlier ancestor. I eliminate congenital syphilis and congenital tuberculosis, for in these the actual disease is simply passed on to the offspring and assumes in it the same activity as it did in the parent. In the inheritance of which I speak it is not disease, but simply a susceptibility, that is transmitted.

How, then, can I best illustrate the physiology of inheritance? Galton in his book on "Hereditary Genius" speaks of the child as being not simply the product of the two lives paternal and maternal, but also of the four grand-parents and eight great-grandparents and so on, indicating that into the production of the physical constitution and mental qualities of a human being there enters more than is contributed by the immediate parents. The book is an attempt to show from the family history and biography of men distinguished in literature, in science, in legislation, in the profession of arms, and in law that the qualities exhibited by men which made them renowned depended less upon their education and surroundings and more upon the physical constitution and mental powers inherited from their parents or earlier progenitors. In one sense the teaching is depressing. We are what we are because we cannot be otherwise and we become what we are through inherited qualities. Human experience, on the other hand, shows that however much certain qualities may be inherited it is not always and alone thus that they come to us. Evolved in the course of time, they have been fostered by survival of the fittest, by marriage, and by education. If we add to patience, to zeal, and to capacity for work good health, then by the proper exercise of all our powers advancement in life must be secured. Social advantages, dogged perseverance in a particular calling, good manners, and ability to utilise opportunities make for success; yet, on the other hand, it must be admitted that when an individual is possessed of great natural ability or those qualities of intellect and disposition that urge to the performance of acts that lead to reputation it is almost impossible for him to have his progress thwarted either by the circumstance of lowly birth, by social disadvantages, or even by the defects of early education. By virtue of the gifts which he has inherited he overcomes all difficulties and therefore must come to the front. If there are inherited qualities that make for good, so, too, must there be others that make for harm to the individual, and it is this particular feature of inheritance that forms the theme of my discourse to-day. When we ask ourselves the question, "What is it that is inherited?" we find it difficult to reply. A mother, for example, may trahsmit masculine peculiarities to her son which she herself does not exhibit, and it does not follow because a father and mother are highly intellectual that their child will also exhibit ability. The child, as already stated, is the offspring, not of the parents alone, but of earlier ancestors as well. Given intellectual parents, all we can say is that the chances are that their offspring will be gifted to a greater degree than children in whose family nothing beyond mediocrity has ever been attained. Ability clings to families, but in order that it may be displayed there must also be inherited capacity and zeal for work, for without these only a sorry figure will be cut in the world by the individual compared with what might be accomplished. We all know persons of this stamp—men who are extremely able, yet since they lack the other qualities they do not rise in life. The number of people must be few who would underrate the influence of early home training or the invaluable help rendered to a youth by a good and able mother. The natural ability of such a mother, finding but limited scope within the confined sphere of her maternal and domestic duties, causes her to stimulate her son to attempt a career and to achieve results which she herself could only aspire to in imagination; hence it is that able men are often the sons of clever women.

If it is true that mental gifts and physical powers are only obtained by inheritance, is no encouragement to be extended to mediocrity and no hope held out to men whose family records contain no names of sons eminent in science, in art, or in literature? To believe that one is destined to a great end is at once to command success, but there is another fatalism that leads to destruction. The age in which we live is one of keen international competition and the prize must ultimately belong to that nation which, possessing great physical vigour, natural resources, or acquired means of sustenance, finds its opportunity in equable development of mind and body, in adherence to right, in patience and persistence, and in the avoidance of all causes that lead to degeneracy, physical, mental, or moral. Evolution proceeds apace in nations as in individuals. It is from the lower ranks of life that the higher strata of society are filled. There is a continual moving upwards. New conditions, fresh surroundings, and unexpected difficulties stimulate men to rise, but behind all these facts there lies the plastic material upon the hereditary acquisition of which in its best form so very much depends. In a general way, then, we support the contention of the author of "Hereditary Genius." Galton's conclusions have not been allowed to pass without a challenge. Some writers maintain that mental ability is not the outcome of inheritance but of individual acquisition, that it is the result of the operation of such causes as education and external surroundings. Without throwing myself further into this discussion at present I shall try to find answers to some of the problems I have raised by going altogether outside the sphere of the human family, whose actions, ruled oftener by sentiment than by reason, cannot always be controlled, and see whether in racehorses whose pedigrees can be accurately traced and doings recorded Galton's theory finds support or not.

THE MODERN RACEHORSE.

So far as I know there is no instance on record of a horse that was not a thoroughbred ever having won the Derby. This circumstance is appealed to in order to demonstrate the superiority of blood and the transmission of racing qualities by careful mating of sire and dam. A certain amount of doubt surrounds the origin of thoroughbred horses in this country, but to the Darley Arabian which came from Aleppo to Aldby Park in Yorkshire *circa* 1705 to 1710 most authorities attribute the commencement of the breed. Others regard the Byerley Turk as the founder of the famous family, others again claim Godolphin and Flying Childers, but Godolphin came upon the scene 20 years after the Darley Arabian and Flying Childers was his own foal. It is the descendants of the Darley Arabian that form the renowned breed of English racehorses, whose speed for short distances is regarded as the outcome of inherited qualities and the result of careful in-breeding. It is an interesting fact that nearly every winner of the great races last year was a descendant of St. Simon who, although he never competed in the Derby, was yet the better horse, for he beat the Derby winner of his year. St. Simon was from first to last an unbeaten horse. He did not run in the Derby owing to the fact that his breeder, Prince Batthyany, died while the horse was a yearling and the nomination therefore became void. The last race St. Simon ran in was at High Gosforth Park as a three-year-old, and this race he won easily. Shortly afterwards he retired with his splendid constitution to the stud and became the progenitor of many distinguished horses—thus causing him to be considered one of the best stallions of the century. During his first six years at the stud he begat stock that won no fewer than 222 races of the value of £220,343. When St. Simon was a two-year-old he ran five races and won them all, and he repeated this as a three-year-old. The Derby was instituted in 1780 and from that date until now the race has been run every year without a break, while the St. Leger, which was commenced in 1776, has also an unbroken record. The Derby is a one-and-a-half-mile race,

the St. Leger one and three-quarter miles, and the Oaks about one and a-half miles. The same weights are practically carried in the three races, horses carrying a few pounds more than the mares. The time the Derby is run in is about 2 minutes 45 seconds, but if the ground is wet it may take as much as 3 minutes 4 seconds. Blinkbonnie and Shotover covered the distance in 2 minutes 45 seconds, but Ayrshire, Merry Hampton, and Blair Athol only took 2 minutes 43 seconds. The winner of the Derby for 1900 was Diamond Jubilee, who also won the Two Thousand Guineas and the St. Leger, and who belongs to the Prince of Wales. The Duke of Westminster's Flying Fox won the Derby in 1899, and in 1896 Persimmon, also the property of the Heir Apparent, was the winner. Both Diamond Jubilee and Persimmon are descendants of St. Simon by Galopin, a Derby winner, out of St. Angela. It is an interesting fact that St. Simon and Perdita II. are the sire and dam of the Prince of Wales's three valuable stallions Florizel II., Persimmon, and Diamond Jubilee, who are said to be worth £120,000. Perhaps never in racing annals has the success of a sire ever surpassed that of St. Simon. Other horses compete with him for distinction. Amongst these is The Baron, who 50 years ago was the sire of Stockwell and Rataplan, animals more valuable in the stud than on the course. There is also the Duke of Westminster's Ormonde who was sold to America for £30,000 and who was the sire of Orme, an animal which is less known as a racer than as the begetter of Flying Fox, who was recently sold to France for £35,000. Add to the above facts the following—viz., that Stockwell is the sire of Doncaster, who is the sire of Bend Or, who is the sire of Ormonde, who again is the sire of Orme, by whom was begotten Flying Fox, and we have a line of famous racehorses which, like that of St. Simon, goes direct back to the Darley Arabian, the father of the best blood in the racehorses of to-day. On the maternal side the strain can be traced back to the Godolphin Arab, a sire who has also contributed to the production of the distinguished breed. It is sometimes said of the human family that the children begotten of an elderly father are delicate. Foals of ageing racehorses are considered by breeders, as a rule, not to be good winners, but there are exceptions. Lord Lyon, who won the Derby and St. Leger, was born in 1863. He was the sire of Minting, who was born in 1883—i.e., when Lord Lyon was 20 years old. His previous foals, however, were of no use as winners, but Minting was an exception.

What is the effect of castration upon horses from a racing point of view? The Derby is open to two-year-old and three-year-old colts, but there is no instance of a gelding having ever won the race. Curzon, who was in addition a half-breed, all but succeeded in becoming the exception to this rule, but he just failed. He ran second in the Derby of 1895. The more natural and the more perfect a horse is the greater is his chance of winning. Entirety, therefore, counts for much even in racing.

We hear a good deal in the affairs of human life of the superiority of sex, and, while there is no doubt that men occupy the higher positions in society and stand out more prominently than women, it may be that greater opportunities and advantages are afforded to the one sex than are afforded to the other. Let us appeal to the experience of the Derby. Girls reach maturity earlier than boys, and for quick perception they are usually far ahead of boys. In the racing world some experts maintain that the best mares are after all the best horses—a statement that is equivalent to saying that mare Derby winners are better than the best horses that have also won the Derby. It is their opinion that racing is carried to greater perfection by mares than horses. Probably a mare at two years old is better than a horse at that age, but it would seem as if mares deteriorate more quickly than horses and compete with them unfavourably as three-year-olds. The Derby is an open race and there mares compete with horses. They have done so, and on some occasions they have won. Blinkbonnie won in 1857 and Shotover in 1882, but previously to Blinkbonnie winning the race no mare had won the Derby since 1801, when to Eleanor, who was also winner of the Oaks, was awarded the palm. It is only right to add that fewer mares have competed and therefore they have run against odds so far as numbers are concerned. Still, the fact remains that during 120 years only three mares have won the Derby. It is fleetness of foot that is wanted, and what do the records show? The mares Blinkbonnie and Shotover ran the Derby in 2 minutes 45 seconds, but the horses Ayrshire, Merry Hampton, and Blair Athol coursed the distance in 2 minutes 43 seconds. It is only natural to suppose that in some respects racehorses are like ourselves. Some days and at certain seasons of the year we are in better physical health and spirits than at others and we do better work. The bulk of high-class racing in England is in the spring and summer when mares are constantly coming into season. They are consequently placed at a disadvantage as regards the Derby, which is run in the month of May. September is the mare's month. It is then that the St. Leger is run. This is a race in which mares and horses compete on equal terms, and what do its records show? Since 1776, the year in which the race was established, mares have only won 23 times out of 124. It would appear, therefore, that both in the Derby and the St. Leger the greatest speed has been obtained by horses and not by mares. In the breeding of racehorses it is absolutely necessary that the greatest care should be taken so as to mate sires of repute with mares that are well bred and distinguished as racers. An opportunity is given to breeders to show off the racing qualities of mares at the Oaks, a race which is only for fillies and which is run two days after the Derby. The winners of this race often become the dams of future winners of the Derby.

I think I have shown you that so far as racehorses are concerned the qualities that make them famous, and upon which a high money value is placed, are inherited. Blood is everything; it is pedigree that commands the price and makes both horses and mares which have been the winners of the principal races so valuable for breeding when they have become old and useless for racing purposes. One illustration of such a mare will suffice, and in this instance I shall take it from our own immediate neighbourhood. Beeswing was born in 1833 and was the property of Mr. Orde of Nunnykirk, near Morpeth. She began to run when she was two years old and continued to run until she was nine years old. She ran in 64 races and she won 51 times, many of the races being over two miles in length. Beeswing won the Newcastle Cup and became the dam of Newminster, who won the St. Leger. Newminster became the sire of Hermit, who won the Derby, while Hermit was the sire of St. Blaise, who also won the Derby. Hermit was also the sire of Thebais and Lonely, both of whom won the Oaks. After 1842 Beeswing ran no more races. She was simply kept at the stud and she died at the age of 21 years. These facts, taken rather imperfectly from racehorses, show us that it is blood or family inheritance and careful training that alone can win the Derby, and that so far as the superiority of sex is concerned the evidence is in favour of the horse rather than the mare. The English racehorse is the product of very close breeding in and in. In the human family, to too close in-breeding or consanguineous marriages is attributed such mental and physical defects in the offspring as deaf-mutism, insanity, and other nervous disorders. Wherever there are defects in the parents or in their family the marriage of first cousins is almost certain to be followed by an intensification of these defects in the children. If close in-breeding in the human family is bad, what is the result of this form of breeding carried on for so many years in the English racehorse? There are many who believe that the English racehorse of to-day is degenerating. Certainly the horses are run too young, for by the time they reach four years of age many of them are practically done as racers. Sprint-running for man or animals is bad, as the distance is covered at an excessive speed from the commencement to the finish. The mode of racing itself tells upon the frame of the individual animal. Add to this the cumulative effects of close in-breeding and there will be much to explain the greater delicacy of constitution, the diminished resistance to cold, and the loss of staying power observed in the racehorse of to-day. Breeders feel that fresh infusion of blood is necessary and that this can be obtained by the mating of an English sire, say, with a pure-bred dam brought from America or Australia whose predecessors, transported years ago to other soil, show a valuable pedigree which has not deteriorated in the descendants in their far-off surroundings.

ATAVISM.

Professor Ewart in his Penicuik experiments deals with subjects similar to those which we have been discussing and their application is obvious. There are uncertainties in stock-breeding just as in Galton's distinguished families. Wherever there is life there is variation. Without variation

life would be monotonous and there would be no development. Stockbreeders take advantage of variation by perpetuating them so as to improve the breed. In the course of breeding the unexpected often happens; results occur that can only be explained by reversion, prepotency, and in-breeding.

Reversion.—Members of the human family do not always bear a resemblance to their parents. The likeness is sometimes rather ancestral than parental. So far as heredity is concerned the parents, we have seen, contribute a half, the grandparents a quarter, the great-grandparents an eighth, and so on, of the total heritage of the average offspring. Composed as the ovum cells and sperm cells are of innumerable gemmules it would seem as if, during development, there occurred conditions in which protoplasmic elements of an older ancestry than the parental competed with those which were derived from the immediate parents and thus succeeded in impressing upon the individual those characters that cause the offspring to resemble, not the parents but the grandparents or even the great-grandparents. That, in a word, is an example of atavism. It is sometimes a circumstance of great value. If, for example, sporting dogs are closely inbred for three or four generations the puppies are extremely degenerated and yet in the grossly in-bred litter there is perhaps one dog who is strong and has a hardy constitution, due to what is called breeding back. He resembles, in a word, a former ancestor, so that reversion would appear to have infused fresh vigour and to have rejuvenated him owing, presumably, to ancestral units having overcome and controlled the more recently evolved and less stable units which, could they have had their own way, would have given rise to "offspring bearing all the marks of decadence that characterised the immediate ancestors."

Prepotency and in-breeding.—In the breeding of animals it is generally admitted that one of the individuals is more prepotent than the other. It is neither easy to demonstrate the fact, nor, when present, to determine the amount of prepotency. In-breeding encourages prepotency. It is because the Jews are a purer breed and an older race that when they marry with the English they are observed to be the more prepotent. In-breeding carried to excess becomes a doubtful heritage. Attempts to obtain prepotency by close in-breeding are often followed by loss of vitality and fertility. By trying to keep the blood too pure species may deteriorate. In order to maintain the vigour of a race cross-breeding becomes at times a necessity. It restores vitality. The protoplasm of animal cells has apparently assigned to it a measured lease of life and unless fresh blood is introduced to rejuvenate it the protoplasm can only give rise to a limited number of generations.

TELEGONY.

In breeding animals for sporting or other purposes the word "infection" is employed to explain the circumstance of a female who had been fertilised for the first time by a male bearing a distinctive colour and form, and who subsequently bears offspring to another male of different colour and form and yet exhibiting a distinct resemblance to the male by which the female was originally impregnated. It is owing to a belief in the occurrence of this possibility that breeders are careful of pedigree dogs and take means to prevent prize bitches being covered by dogs that are not of good breed. These men are afraid of the baser blood showing itself in future generations. It is maintained, although it is difficult to demonstrate the fact, that the same thing occurs within limits in the human female. The example of telegony taken from biology, and which appears in nearly all text-books, is Lord Morton's mare. This mare had been, in the first instance, covered by a quagga, and succeeding foals begotten by other sires showed in a descending scale stripes on the body that recalled the zebra. While Professor Ewart, in his experiments at Penicuik, obtained striping and marking of succeeding foals by different sires as in Lord Morton's mare, he explains the circumstance differently. Ewart regards the striping not so much as evidence of "infection," or "telegony," but of "reversion," for stripes, he maintains, are not unknown in Arabian horses. Belief in harking back, or "infection," is so strongly held by breeders that it must rest on some foundation. Breeders are of the opinion that in impregnation something akin to saturation of the dam's blood and nature takes place through the sire. Is it possible that there can be any absorption from the blood of the fœtus in utero by the mother? We know from experiment that the injection of diphtheritic and protective toxins into the embryos of pregnant rabbits can kill the mother in the one instance and render her immune in the other. Physiological injection is therefore a possibility, but it is difficult to see how germ-cells occupying the depths of the ovary of the female at the date of her first impregnation can have their protoplasm so impressed by the sperm-cells of this sire that when subsequently impregnated by other males the progeny should bear resemblance to the original sire. There is no proof that the blood of the mother or her system can be saturated, and yet such circumstances as the following are known. In breeding Bedlington terriers it is desirable to obtain dogs with as powerful jaws as possible. A Bedlington bitch is therefore first covered by a bull-terrier dog and the mongrel litter is destroyed. Covered subsequently by a Bedlington terrier dog the litter is practically pure with the exception that the puppies have stronger jaws than they otherwise would have had, and they also show much of the gameness of the bull-terrier. Anatomical structure and physiological characters are therefore present in the second litter which do not belong to the breed at all, and they could only have come from the bull-terrier. It is difficult to find examples in the human race, but Dr. Balfour of Surinam noticed among the coloured population that "if a negress had a child by a white man and afterwards fruitful intercourse with a negro, the latter offspring had generally a lighter colour than the parents." Beyond, therefore, drawing your attention to the possibility of telegony, I shall not attempt to explain it.

HEREDITY OF DISEASE.

By the term "heredity of disease" I do not mean, as in congenital syphilis, transmission of the actual disease from which a parent is suffering, but a susceptibility to disease. Among the hitherto recognised diseases might be mentioned hæmophilia, cancer, phthisis, diabetes, and the alcoholic habit. In hæmophilia there is transmitted to males, through the female who does not herself usually exhibit the disease, a peculiar defect confined probably to the walls of the small blood-vessels whereby on the occurrence of the most trivial wound—e.g., lancing the gums or the extraction of a tooth—fatal hæmorrhage may occur. The hereditary nature of this disease, or the fact that the transmission is through the female, have never been questioned. An extended genealogical tree which appears in a former paper written by myself[1] showed how, after lying dormant in the mother, the disease re-appeared in her sons.

Diabetes is, in many instances, a hereditary disease. Weil, in investigating diabetes insipidus, traced 90 members of a family extending through four generations, 70 of whom were living at the time of the investigation. The disease was traced to a common ancestor, Peter Schwartz, who was born in 1772. His descendants consisted of five children, 29 grandchildren, and 56 great-grandchildren, or a total of 91 persons. Of these persons 21 were certainly diabetic and 13 were doubtfully so. Removing the doubtful cases there remained 78 persons, of whom 23 were affected with diabetes, or 30 per cent. I have at the present time under my care two brothers, aged 40 years and 43 years respectively, suffering from diabetes mellitus. In one of them the glycosuria is intermittent. The father died from diabetes and a paternal uncle is at present dying from the same disease. The maternal grandmother died from diabetes. Within the last four months I have also had under my care a father, aged 45, who is suffering from diabetes, and his daughter, aged 14 years, suffering from the same malady. The Royal Insurance Company have been good enough to send me the details of the family history of an applicant for insurance to their company. The applicant had seven brothers and one sister. The father died from diabetes, aged 65 years. One brother, aged 19 years, died from the effects of an accident. Three brothers, aged 49 years, 41 years, and 32 years respectively, died from diabetes; and one sister died from the same disease at the age of 23 years. The remaining three brothers are healthy. Facts such as these surely point to diabetes mellitus under certain circumstances being hereditarily transmitted.

When we come to deal with phthisis and cancer, the former of which is a bacillary disease, we admit that it is necessary somewhat to alter our views upon the hereditary character of these diseases. Briefly, all that can be said of pulmonary tuberculosis is that there is the accidental

[1] THE LANCET, Sept. 18th, 1886, p. 526.

incidence of the tubercle bacillus upon tissues that are susceptible. Experience tells us that some families are more susceptible than others to infectious diseases. Some children take every infectious disease that is going, while others, though equally exposed to infection, escape. It would seem, therefore, as if a certain habit of body was transmitted, due to some peculiarity of the idioplasm of the individual. However excellent a filter the human placenta may be it cannot prevent maternal poisons passing to the fœtus. Tuberculosis itself is so very rarely transmitted directly from parent to child that at this juncture we can ignore it, nor is there any strong evidence that the virus is transmitted and lies dormant for a period. All that is transmitted is the soil—an enfeebled constitution or diminished resistance to the particular microbe. In the close intimacy that exists between an affected mother and her infant there are doubtless opportunities given after birth for infection, but this is infection and not transmission. The soil counts for as much as the micro-organism. Charrin has demonstrated experimentally that if the blood and tissues of the body are chemically altered resistance to pathogenic germs is diminished, while Chatin and Guinard have shown that when an animal is impregnated with excess of sugar it becomes a readier prey to the diphtheritic poison and to the infection of typhoid fever. Excess of fat also diminishes the resistance to diphtheria, whereas animals that have been exposed exclusively to proteid food resist for the longest time the diphtheritic poison. May not the lines of cellular nutrition which are laid down in the fœtus in utero and which are inherited be the explanation of susceptibility to disease?

It is difficult to obtain with accuracy the medical history of any human family, for where there are mental and physical defects there is rather a desire to conceal than to publish the facts. The records of insurance companies, however, to some extent remedy this deficiency. Before examining a life for insurance the details of the family history have generally been supplied to the offices. Within the last 50 years the span of human life has distinctly lengthened. In England and Wales during the period from 1841 to 1850 the death-rate in males of all ages was 23·1 per 1000. During the years from 1886 to 1889 the rate was 20 per 1000, while among females the rates were 21·6 and 17·8 per 1000 respectively, showing, therefore, a distinct gain. Opposed to these facts must be placed the number of births. The birth-rate of this country during 1842 equalled 32·6 per 1,000,000 of the population, while in the period from 1886 to 1890 it equalled 31·4—a fall in the birth-rate which, if it continues, may jeopardise the future of England just as at the present time it is the cause of anxiety in France.

Pulmonary phthisis has for long been regarded as hereditary. Where there is a family history of phthisis insurance companies may accept the life, if the applicant is under 30 years of age and physically strong, but they will load it by adding a few years to it, or if several members of the family have died from phthisis they will refuse the life altogether. Experience has taught them that members of a family, some of whom have already succumbed to phthisis, are much more liable to the disease than members of other families which have no such record. Owing to the change that has come over medical opinion in regard to the hereditariness of phthisis, to fuller knowledge of its bacillary character, to improvement of the physical conditions of life, and to the fact that the death-rate from this disease is diminishing, insurance companies are disposed, according to the extent of the taint in the family, to offer less stringent terms than formerly. During the years from 1858 to 1860 the number of people in England and Wales who died from phthisis was on the yearly average 2565 per 1,000,000. During the period from 1871 to 1875 the average number was 2218. Between the years 1886 and 1890 the death-rate from this cause was 1635, in 1891 it was 1599, and in 1892 it stood at only 1468. Within these years there has been a fall in the mortality-rate of phthisis of 42 per cent. The diminution of the death-rate may be consequent upon our better knowledge of the infectious nature of the malady and improvement in the housing of the working classes, or it may possibly be due to reversion, as in the case of in-bred animals, to a healthier stock. Notwithstanding Weismann's theory that acquired characters are not transmitted, and that the germ-plasm alone is transmitted, there is yet implanted in the nucleus of the cell a tendency to variation. Its structure cannot but be influenced by the character of the protoplasm that surrounds it, and hence while Weismann's theory explains much in heredity there are still conditions that are not explained by it. Experience and statistics alone can settle the question of family phthisis. Because the death-rate from phthisis is diminishing that is no proof that the disease is not hereditary. All that this circumstance shows is that there are fewer cases of acquired as well as of inherited phthisis, and that improved vital resistance on the part of the individual is to some extent overcoming the hereditary influence.

The Mutual Life Insurance Company of New York has recently published its mortality records for 56 years. The report covers the years from 1843 to 1898 and it deals with 46,525 deaths that occurred during this period. The statistics are taken mostly from North America. The rate of mortality from all causes is observed to rise with advancing age, and the same diseases that affect youth carry off people in old age. Tuberculosis caused 5585 deaths, and with the exception of 133 cases the respiratory organs were affected in all. Dividing the age-periods into three—(1) those under 45 years of age, (2) those between 45 years and 60 years of age, and (3) those above 60 years of age—it is observed that the mortality-rate of tuberculosis is highest at the early ages and diminishes with advancing years, although it is still observed in extreme old age, a circumstance which is contrary to what has hitherto been generally believed. Of each 100 deaths from tuberculous disease the first age-period (i.e., under 45) shows 59·2 per cent., the second age-period 28·94 per cent., and the third age-period 11·85 per cent., while taking the total deaths from all causes, tuberculosis caused 24·27 per cent., 10·88 per cent., and 4·03 per cent. of the deaths in the respective periods.

TABLE I.—*Showing the Mortality from Tuberculous Diseases for Various Age-periods (Mutual Life Insurance Company of New York).*

Age-periods.	Number of deaths.	Per-centage.	Percentage of total deaths from all causes.
Under 45 years	3307	59·21	24·27
From 45 to 60 years...	1616	28·94	10·88
Above 60 years	662	11·85	4·03
Total	5585	—	—

Table I. shows that the largest percentage of deaths from phthisis occurred under 45 years of age, and that no period of life was free from it.

TABLE II.—*Showing the Mortality from Tuberculous Diseases in Non-consumptive and Consumptive Families respectively (Mutual Life Insurance Company of New York).*

Age at death.	Deaths in non-consumptive families.			Deaths in consumptive families.		
	From all causes.	From tuberculosis.	Percentage of deaths from tuberculosis.	From all causes.	From tuberculosis.	Percentage of deaths from tuberculosis.
To 29 years	106	38	35·8	60	31	51·6
From 30 to 39 years	372	98	26·3	194	77	39·6
,, 40 to 49 ,, ...	566	100	17·6	284	70	24·6
,, 50 to 59 ,, ...	724	49	6·7	489	77	15·7
,, 60 to 69 ,, ...	613	36	5·8	569	47	8·2
,, 70 to 79 ,, ...	325	12	3·7	398	8	2·2

Table II. shows that the greatest number of deaths from phthisis occurs under 30 years of age, both in families that have a history of the disease, and in those that are non-consumptive, and that it is larger in the "tainted" than in the "non-tainted" section for every decennial period of life to extreme old age. The taint, therefore, would seem to last pretty well all through life, so as to render the member of a consumptive family more liable to phthisis than an individual in whose family there is no such record, but the ratio of mortality among the total causes of death diminishes with advancing years, owing to the fact that other diseases come

upon the scene. It is in the early years of manhood that phthisis claims the largest number of victims, for after middle age degenerative diseases of the circulatory and nervous systems make their appearance and cause it to assume a less conspicuous position. The age of 35 years, in the experience of the Scottish Widows Fund, is that in which the largest number of deaths occurs from phthisis. From the tables drawn out by the Mutual Life Insurance Company of New York it appears that a family history of phthisis indicates (1) a liability to the disease on the part of an applicant for life insurance, and (2) that the amount of this increased liability may be estimated at 30 per cent., an estimate that holds good certainly until the age of 50 years is reached. Naturally, where there is a history of two or more tuberculous persons in a family this circumstance is of more ominous importance than where there is the record of only a single case, and the death of a parent would carry more weight than that of a brother or a sister, especially up to the age of 40 years. There is a belief that of the two parents the mother who is consumptive and in whose family there are records of this disease is more likely to transmit a liability to phthisis than the father. The statistics of the Mutual Life Insurance Company of New York, however, rather point the other way and show that the percentage liability to phthisis between 20 and 29 years of age is 43·3 when the father has died from phthisis, and 36·5 when the mother was the subject of the malady. Another point sometimes raised is whether the tendency to phthisis is not more marked between brothers and sisters than between parents and children.

TABLE III.—*Showing the Proportionate Mortality from Tuberculosis among those with tainted Record and arranged according to the Degree of Taint and the Age at Insurance.*

Number of members of family affected.	Total.	Age at insurance.			
		20 to 29 years.	30 to 39 years.	40 to 49 years.	50 years and upwards.
	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.
Both parents ...	14·3	—	—	50·0	—
Father	20·7	43·3	16·1	10·4	9·6
Mother	15·5	36·5	17·1	7·5	4·6
Parent and brother or sister	11·0	18·2	21·4	5·5	—
One brother or sister	14·3	34·1	20·6	10·2	4·3
Two or more brothers or sisters	19·4	62·5	42·4	7·5	7·5
Tuberculosis per-centage	12·7	28·5	13·3	6·8	4·6

Where there is a history of tuberculosis in both parents insurance companies will hardly accept the life. The statistics of double inheritance in the preceding table refer to such a small number of cases that they scarcely give us complete information upon this part of the subject. Besides, where there is a history of phthisis in a family it does not necessarily follow that the sons and daughters shall die from the disease. All that can be said is, that there will be in them a greater predisposition to phthisis. Since, therefore, individuals of a tainted family may completely escape phthisis, this circumstance suggests that conditions are in operation to neutralise this hereditary tendency. Improved external surroundings, better ventilated homes and workshops, less dusty occupations, and improvement in the physique of the individual as shown by greater muscular vigour, increased weight of body and chest measurement, render the individual less liable to phthisis. All "consumptives," as the name naturally suggests, are below the normal weight. It is known that "the highest proportion of consumption mortality, and the highest proportion of underweights are found before middle age; the least percentage of consumption mortality and the highest proportion of overweights after middle age." In persons with no history of phthisis in the family there are twice as many deaths among those below than above the average weight, while in tainted families the percentage is greater—circumstances which show that poor physique and enfeebled nutrition play some part in the causation of the disease. In the experience of the Scottish Widows Fund 80 per cent. of the sufferers from phthisis fell short of the average of weight to height. Light weight, and especially losing weight, are precursors of phthisis. Robust bodily development is therefore not without a favourable influence, and yet it does not prevent phthisis, for I have seen some of the strongest athletes with splendid physical frames, sons of a tainted family, succumb one after another to the inherited malady. Nor, on the other hand, does robust physical development, even in the absence of family taint, ensure against the danger of phthisis. All are liable to phthisis but the liability is shared unequally. While, therefore, we admit that the family history has a value which cannot be ignored, personal development, station in life, occupation, and surroundings are circumstances that play a part in the causation of disease as great as, if not greater than, inheritance. Dr. Claud Muirhead,[2] medical referee to the Scottish Widows Fund, states that 15 per cent. of their applicants for admission show a family record of phthisis, and that in his experience undoubted phthisis is more frequently transmitted by the mother than by the father, the ratio being 6·29 per cent. on the side of the father as against 8·97 per cent. on that of the mother. The experience of the Scottish Widows Fund in regard to phthisis is, generally speaking, much more favourable than that of the American office. It shows that the tendency for phthisical parents to beget phthisical children is small, the difference between the two classes of parents being only 1 per cent., the number being 8 per cent. for consumptives and 7 per cent. for non-consumptives. The subjoined table shows that where lives are selected *after* medical examination the death-rate from phthisis is distinctly lower than that of the community so far as Scotland, at any rate, is concerned, but not of people living in the country districts after 30 years of age.

TABLE IV.[3]—*Percentage of Deaths from Consumption on the Total Mortality from all Causes for each Decennial Period of Adult Life (Scottish Widows Fund)*

Age.	Scottish Widows Fund.	Mutual Life Assurance Company.	New York Assurance Company.	Scotland.	Ten Scotch counties.
From 20 to 29 years	31·82	37·09	40·84	43·25	32·60
,, 30 ,, 39 ,,	29·45	28·06	35 13	30·04	23·58
,, 40 ,, 49 ,,	15 16	19 62	28 46	19·45	13·59
,, 50 ,, 59 ,,	6 39	10·27	23·99	8·09	7·47
,, 60 ,, 69 ,,	3·04	6·10	18·57	5·03	2·44
,, 70 ,, 79 ,,	0 78	5·51	12·72	0·95	0·63
,, 80 ,, 89 ,,	0·03	—	5·56	1·97	0·52
All ages above 20	9·51	19·74	29·38	13·60	11·75

The Royal Life Insurance Company has, like the Scottish Widows Fund, been good enough to favour me with their experience of tuberculosis. Taking 188 of their deaths from this disease I find that the greatest number occurred from the fiftieth to the sixtieth year of age, that in 25 cases a parent, a brother, or a sister had died from phthisis, that in 19 one or more of the grandparents had died early (many of them presumably from phthisis), and that in at least nine of these there was a history of a parent, or brother, or sister having died from tuberculosis.

In spite of all that has been said and published by insurance offices there are still many who do not believe in the inheritance of phthisis. Personally I have no doubt as to the transmission of a susceptibility to phthisis, but the influence of this is much less than we have hitherto believed, and apparently it is in these latter years a diminishing factor. Admitting for good or ill all the influence of external surroundings, it is impossible to ignore the history of tuberculous disease in the family that is given by patients who came to the Newcastle-on-Tyne Infirmary and to our consulting-rooms. Dr. Reginald E. Thompson[4] tabulated all the cases admitted into the Brompton Hospital for Consumption from 1855 to 1880—i.e., a quarter of a

[2] In a paper read before the Faculty of Actuaries in Scotland, January, 1893.

[3] Ibid.

[4] Family Phthisis.

century. The history of each case was carefully recorded by the clinical assistants and the diagnosis made by the physicians, care being taken to exclude such errors as the possibility of infection from one member of the family to another. Dr. Thompson's experience confirms what has already been said. He shows, too, that where there is a family history of phthisis the members of that family who become phthisical do so at an earlier age than those of an untainted family who acquire the disease; also that where there is a history of both parents having been tuberculous there is not only a greater liability to the disease but that it develops at a still earlier age than when there is only a single inheritance. Out of 3000 cases at Brompton Hospital Dr. Thompson found that 36 per cent. of the males gave a family history of phthisis and 58 per cent. of the females the same. In 80 cases of well-marked family phthisis he found a history of paternal inheritance in 24 instances and maternal inheritance in 30 cases, double heredity in 14 cases, and atavism in 12 cases. Among these 80 families 385 children were born, of whom 203 were males and 182 females. In them phthisis appeared in 98 males and 96 females, there died in childhood 21 males and 16 females, and there remained apparently healthy 84 males and 70 females. In other words, 194 members of these tainted families, or one half, died from phthisis, 37 of the deaths occurring in childhood. It is Dr. Thompson's opinion that the effect of paternal inheritance upon males is to cause phthisis to appear at an earlier age than in the parent and to reduce the constitutional resistance of the individual to the disease, while upon the females it also causes an earlier manifestation of the disease, but if anything increases their resistance to it. The influence of tuberculous mothers, on the other hand, upon males is to increase the tendency to rather copious bleedings from the lungs, a circumstance not so noticeable in females.

I have dwelt upon the evil effects of "in-breeding" in animals. If these are bad in the case of animals how very much aggravated must they be in the human race when there is a family history of phthisis. On humanitarian grounds alone consumptives should not marry. Marriages, however, are not regulated by reason but by sentiment, and even when circumstances are made clear to one of the contracting parties, an expression of optimism usually prevails before which pathology generally has to bow.

We have seen that there is an individual and family susceptibility to phthisis. There is also a racial susceptibility and no one doubts that the characters of race are inherited. Over a period of six years ending in May, 1890, it was estimated that in every 100,000 of the population of New York phthisis claimed on an average 238·48 per annum of the white native population, 483·83 of the foreign white population, and 774·21 of the coloured population. Negroes and the offspring resulting from the union of the white and coloured races in America are extremely susceptible to phthisis, and yet while the negroes exhibit this excessive liability to the disease the Jews are wonderfully exempt from it. Out of every 1000 of the total deaths of the whole of the United States, pulmonary consumption carried off in 1880 108 79 of the general population but only 36·57 of Jews. This freedom of the Jews from consumption has for long attracted attention. It can scarcely be said that their homes are more sanitary than those of Christians or that they are more given to ventilating them. As a class they are more abstemious and their food is better prepared and they are the more vigorous race. That over-populated districts are unhealthy requires no demonstration. Dr. J. B. Russell of Glasgow found that where the death-rate was greatest the cubic space was smallest. In 100,000 of the population the death-rates from diseases of the lungs, including phthisis, were in one-roomed or two-roomed houses 985, in three-roomed or four-roomed houses 689, and in five-roomed houses and upwards 328. Where overcrowding exists there is a greater tendency to tuberculous disease simply on the ground of contagion. It is not that the tuberculous patient gives off in his breath bacilli into the atmosphere, but that the sputum contains the microbes and as the expectoration heedlessly spat upon the floor dries and is ground into dust this rises into the atmosphere, is inhaled, and so the disease spreads. Each individual becomes thus a centre of infection to others.

We have seen that not only in the medical profession but in the public mind and in insurance offices there is a belief that pulmonary phthisis is hereditary. Careful sifting of all the facts shows that the extent of the inheritance has been exaggerated.

Without carrying the remainder of this inquiry much further I shall only say a few words on the question of the hereditariness of cancer. The mortality records of the Mutual Life Insurance Company of New York deal with 1882 deaths from cancer. The age period in which the largest number of deaths from cancer occurred is from 55 to 60 years. Statistics, both in England and in America, show that the rate of mortality from pulmonary phthisis is decreasing while the deaths from cancer are notably on the increase. It may be that cases are more carefully diagnosed now than formerly, but apart from this probability, there is a very strong feeling in the medical profession that cancer is more prevalent than it was. Taking the cancer returns of the American insurance office I find that while in 1879 the percentage of deaths from cancer between the ages of 50 and 70 years was 4·23, in 1889 it was 6·22, and in 1898, 7·59. In support of the opinion that cancer is increasing I would also draw attention to the statistics of the Scottish Widows Fund kindly placed at my disposal by Dr. Claud Muirhead, principal medical adviser to that society. From 1815 to 1845 the deaths from cancer were 0·93 per cent. of the whole number. From 1845 to 1852 they were 0·72 per cent., from 1852 to 1859 2·87 per cent., from 1859 to 1867 3·0 per cent., from 1867 to 1873 4·56 per cent., from 1873 to 1880 4·34 per cent., and from 1880 to 1887 5·23 per cent. Allowing for greater accuracy in the returns Dr. Claud Muirhead admits that "the number of deaths from this cause has increased enormously, the number being more than 40 times greater than in the previous 37 years." Females die from cancer in a proportion double to that of males, their mean age at death being 62·69 years, as against 60·43 years of males. In regard to the hereditariness of cancer the statistics of the Scottish Widows Fund show that only in 9·5 per cent. was there a history of malignant disease in the parents. In 11 of the cases the disease was transmitted through the father, in 14 cases through the mother, and in one case a brother was similarly affected. The hereditary transmission of cancer is considered to be not so great as that of phthisis, a fact that must be comforting to many people who have lost near relatives from cancer.

Summing up the subject, as to what is inherited from our parents, I would say that from a physiological point of view there is considerable evidence to show that mental, not less than physical, qualities are transmitted, that pathologically such a disease as hæmophilia is inherited, and that where there is a family history of phthisis and cancer there is, especially as regards phthisis, a greater liability to the disease than where a family shows no such record. I believe that the influence of inheritance, however, has been exaggerated. Tuberculous disease is inherited, but only in the same sense as other diseases that are due to microbes. It is in the form of an enfeebled resistance on the part of the tissues. Pulmonary phthisis seems to exhibit a kind of inheritance that is particularly its own, but on scrutiny this is found to be largely due to the domestic character of the malady which is encouraged by our home life, insanitary dwellings, overcrowding of the poorer working classes, infection, Britain's changeable climate, dusty occupations, and ill-assorted marriages.

TWO CASES OF ACUTE HÆMORRHAGIC PANCREATITIS.

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I PUBLISH these two cases as they present some curious features which I have not been able to find recorded before. If perchance I have missed any case in which similar changes have been noted I take this opportunity of apologising to the author or authors for claiming them as new. In Case 1 when performing the necropsy I found marked fat necrosis of the mediastinal and pericardial fat and in both cases at the time of the operation the peritoneal cavity was found to be distended with large quantities of bile-stained serous fluid.

CASE 1.—The patient, a bandmaster, aged 36 years, was admitted into Luke Ward at Guy's Hospital on May 31st, 1899, under the care of Mr. L. A. Dunn, for excruciating

pain in the abdomen. On Sunday evening, May 28th, he was playing in a band at Portsmouth and felt quite well and later in the evening he partook of some pigeon-pie for supper. On coming up to London in the train on the same night he was seized with violent pain in his abdomen and was sick. He went to a medical man who gave him an injection of morphia and he passed a very fair night. On the 29th the pain was just as bad and the medical man gave him another morphia injection, but he had a bad night. His bowels were fairly well opened. On the 30th the pain had much increased. He was very sick, he brought up a quantity of gas, and he passed a very bad night. On the 31st he was in a very collapsed condition; he was in great pain and was unable to take any food. He was removed to the hospital in the evening.

On admission the patient was found to be very collapsed. The pulse was 144 and feeble. He was in great pain and could not bear to be touched. He was soon afterwards seen by Mr. Dunn and myself. We ascertained that for some years he had suffered from attacks of abdominal pain and sickness, points which materially influenced our diagnosis. An examination of the abdomen showed it to be rather distended, especially in the upper part between the umbilicus and the ensiform cartilage. There was no pain, tenderness, or tumour in the right iliac fossa. The abdomen was most tender between the umbilicus and the ensiform cartilage, and the wall in this part was very resistant. The abdomen was dull on percussion. He vomited some bile-stained matter and brought up a lot of foul-smelling gas. We came to the conclusion, taking into consideration the previous history of abdominal pain and vomiting, the sudden onset, and the position of the pain and tenderness, that the most likely diagnosis was one of perforating gastric ulcer. The possibility of acute hæmorrhagic pancreatitis was mentioned, but we thought that perforating gastric ulcer was more likely to be correct.

At 8.30 P.M. on May 31st Mr. Dunn performed laparotomy. The stomach and duodenum were found to be quite healthy. Patches of fat necrosis were discovered in the sub-peritoneal fat and in the mesenteric and omental fat. A large hard mass was felt in the region of the pancreas and a diagnosis of acute hæmorrhagic pancreatitis was made. On exploring the pancreas a large quantity of clear, dark-brown, bile-stained serous fluid escaped from the lesser peritoneal cavity

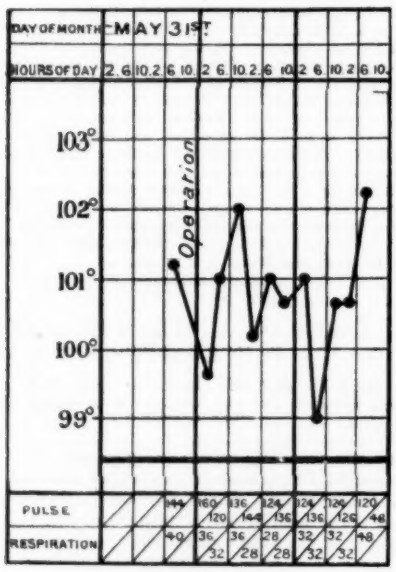


Chart showing course of temperature.

and later from the general peritoneal cavity. The abdominal cavity was flushed out with hot saline solution, a drainage-tube one inch in diameter was inserted, and the abdomen was closed. During the night he became very restless. On June 1st in the morning he appeared to be better and was able to take some nourishment. On the 2nd he was worse; at two o'clock on that day the pulse was 128 and was very feeble in character. He took nourishment up to 1 P.M., but after that he refused it; at 6 P.M. his temperature rose to 102·2° F. and he died.

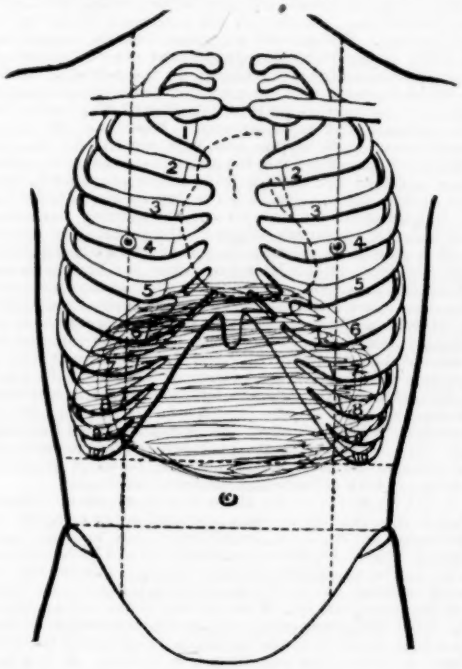
At the necropsy, which was performed by me on June 3rd, the body was found to be very well nourished. The complexion was dark. There was no anasarca. The brain was not examined. The thyroid was much larger than normal, but on section it had a perfectly normal appearance. There was no pleurisy. The lungs were engorged with blood, but there was no pneumonic change. The mucous membrane of the trachea and bronchi was much congested. The mediastinal fat and the intra-pericardial fat showed a number of opaque, milky-looking spots of undoubted fat necrosis. There was no direct communication between the peritoneal and pericardial cavities. There was no pericarditis. The heart weighed eight ounces. The myocardium was soft and flabby. The left ventricle was dilated. The endocardial lining was stained a deep red on both sides. Frothy blood was found in the right ventricle. The valves were healthy except for their colour. The intima of the blood-vessels was stained a similar colour. The mucous membrane of the œsophagus was deeply stained with bile. The stomach was congested. The duodenum presented a normal appearance and there were no signs of catarrh. Areas of fat necrosis, varying in size from minute, almost imperceptible spots to others one-sixth of an inch in diameter, some a dead white, some a golden yellow, others a greyish yellow, and some a milky white, were seen throughout the peritoneal cavity wherever fat was situated. The peritoneal cavity contained a good deal of blood-stained fluid. There was no peritonitis. In the position of the pancreas a large hard mass about three or four times as large as a normal pancreas was found, which appeared to be chiefly made up of blood of a dark chocolate colour. On section very little trace of any normal-looking pancreatic tissue could be seen; the whole organ was infiltrated with, and appeared to be tightly distended with, blood. In places dark-brownish breaking-down necrotic areas were seen, the largest being about a quarter of an inch in diameter. The inter-acinous, inter-lobular, and peri-pancreatic tissues all appeared to be infiltrated with blood. The head of the pancreas appeared to be the most thickened part of that organ; it measured 4·2 centimetres in the antero-posterior diameter. The gall-bladder was thickened; it contained several gall-stones and a thick brownish fluid. The liver weighed 60 ounces and it was normal. The spleen also was normal; it weighed four and a half ounces. An examination of the pancreas and its adjacent tissues some time after it had been lying in formalin solution showed some reddish areas of hæmorrhage in the fat of the mesentery similar in size and form to the areas of fat necrosis and suggested that the earliest change which took place in the fat was one of hæmorrhage. The kidneys were normal; they weighed 10 ounces. There was a considerable amount of hæmorrhage into the perinephric tissues and in the fat numerous points of fat necrosis were seen.

On microscopical examination sections of the pancreas showed marked inflammatory changes. The outlines of the acini were just visible; the nuclei of the cells lining the acini were, however, unstained and were almost indistinguishable from the protoplasm of the cells which was granular and cloudy in appearance. In places no traces whatever of the normal pancreatic structure could be seen, it being replaced by a structureless granular débris. No marked blood extravasations were visible; the blood-vessels generally were very distended with blood. The fat in the interlobular tissue showed many areas of fat necrosis. The increase in the size of the pancreas was more apparent than real, as the blood was almost entirely effused into the peri-pancreatic tissues. The mediastinal and pericardial fat showed typical fat necrosis.

CASE 2.—The patient, a man, aged 22 years, was admitted into John Ward, Guy's Hospital, under my care on Sept. 16th, 1899, suffering from abdominal pain. The clinical clerk was Mr. A. A. Miller. The patient had had an attack of jaundice on the previous Christmas. He had frequently had attacks of abdominal pain since, which he ascribed to indigestion, and for a few days he had noticed that his urine was very dark in colour. Two days before his admission into the hospital he had a severe attack of abdominal pain. He went to a medical man who noticed that he was slightly jaundiced and thought that the case was one of biliary colic. The bowels had been opened regularly. As he became worse he was sent to the hospital and admitted.

The following was his condition on admission. The pulse

was 140 and was very soft and compressible and the temperature was 97·6° F. He complained of pain in the abdomen, but did not appear to be much distressed. His colour was good and he was not jaundiced. The tongue was slightly furred. There was some distinct fulness in the upper part of the abdomen between the umbilicus and the ensiform cartilage. There was also a little fulness in the left hypochondriac region. The abdomen moved hardly at all on respiration. There was tenderness over the upper part of the abdomen, but it was not very intense. There was a curious area of dulness extending from the ensiform cartilage to the umbilicus and on each side to a point about an inch outside the nipple lines (see Figure). The heart and



The shaded part represents the area of dulness.

lungs were normal. I saw him very soon after his admission and thought the diagnosis rested between acute hæmorrhagic pancreatitis and perforating gastric ulcer. Mr. Dunn was called in to see him and he agreed with the diagnosis, but as he was rather collapsed he decided not to operate until some stimulants had been administered. Tincture of digitalis (15 minims) and solution of strychnia (five minims) were given hypodermically and a saline enema of one pint was injected, with the result that the patient's pulse improved in rate and volume, being 128 per minute just before the operation. A.C.E. was administered and he took the anæsthetic well.

After the patient had been carefully prepared to prevent any risk of sepsis Mr. Dunn made an incision in the middle line of the epigastrium and opened the peritoneal cavity. Some bulging was found in the region of the small omentum. Mr. Dunn therefore opened the lesser sac, when a large amount of clear bile-stained fluid flowed out. The gall-bladder was felt to be full, but no rupture of that organ or of the ducts could be discovered, nor was there any perforation of the duodenum or of the stomach. The pancreas did not appear to be enlarged. Some parts of the small intestine appeared to be a little collapsed. Fat necrosis was carefully looked for but none was found. It was at first thought that the bile-stained fluid was confined to the lesser peritoneal cavity, but a second incision was made below the umbilicus and bile-stained fluid flowed away from here also. Two drainage-tubes were inserted into the upper opening and one into the lower opening and the upper wound was partially closed with a double row of sutures. The operation did not clear up the diagnosis. As the pancreas did not feel enlarged and as there was no fat necrosis visible the diagnosis of acute hæmorrhagic pancreatitis was given up. The cystic duct was intact but the bile duct and hepatic ducts could not be satisfactorily examined.

The patient was put back to bed and was placed on his left side. A port wine enema was given immediately and about one and a half pints of saline solution were infused into the axilla. He came round well from the anæsthetic and was very little sick. The pulse was almost imperceptible at 11.20 P.M. and the hands were very cold. Twenty minims of brandy were given hypodermically and the saline enema was repeated. This caused a decided improvement in the pulse. The dressings were changed at this time. He subsequently became very restless, and one-sixth of a grain of morphia was given hypodermically but had no effect, and at 2 A.M. on the 17th the pulse again became very bad. The dressings were changed. The pulse continued very rapid in the early morning but improved later. He was of a good colour and the tongue was clean. The hands were cold, but other parts were warm. He was again very restless, and at 12.10 P.M. an injection of a quarter of a grain of hydrochlorate of morphia was given. This gave him about half an hour's sleep, and another injection of hydrochlorate of morphia (one-sixth of a grain) was given at 9.50 P.M. He was dressed twice, the dressings on both occasions being saturated with bile-stained fluid. On the 18th the abdomen became more distended and was tender. Sickness commenced in the morning and the patient complained much of flatulency. He was fed on albumin water. He was very restless and could not keep still. The sickness increased in the afternoon and at 4 P.M. he became very collapsed and he died at 5.30 P.M. The cause of death was considered to be peritonitis and the primary condition was thought to be rupture of the common bile duct or of one of the hepatic ducts. The fluid obtained at the operation contained a large quantity of bile. Cultures were taken and proved to be sterile both under aerobic and anaerobic conditions. No micro-organisms could be detected on microscopical examination of the fluid.

The necropsy was made 20 hours after death when rigor mortis was well marked. The body was anæmic but it was not wasted. The conjunctivæ were slightly tinged with yellow. The brain was not examined. There was no pleurisy but there were numerous sub-pleural petechiæ. The lungs were normal. The heart weighed nine ounces and was normal. General acute peritonitis was found, the peritoneum being injected and covered with flakes of yellow bile-stained lymph. At the time of the operation there was no peritonitis, so that it must have followed the draining of the peritoneal cavity. The coils of intestine were found adhering to each other. There was a good deal of turbid bile-stained fluid in the peritoneal cavity. The peritoneal blood-vessels were much congested. The stomach and duodenum were quite normal; there was no ulceration or perforation and the mucous membrane presented quite a healthy appearance. The small and large intestines were also quite normal in appearance. The pancreas was much enlarged, feeling about one and a half times as large as it should have been under normal conditions. It was adherent to the adjacent structures and it was covered with lymph which was deeply stained with bile. The under-surface of the liver was covered with lymph and the connective tissue in the portal fissure had a sodden appearance and was deeply stained with bile. Bile could be squeezed from the gall-bladder into the duodenum. The gall-bladder was not abnormally large, but its walls were œdematous. The common duct was patent and its mucous membrane was bile-stained; it was not ulcerated and there was no fistulous opening. The hepatic ducts were normal, so also was the cystic duct. A small calculus of about the size of a pea was found in the common duct resting in a fold of mucous membrane just where the cystic duct joined it. The fat in the neighbourhood of the pancreas showed spots and patches of fat necrosis. The pancreas was firm and hard. There were many little infiltrations of blood either into the tissues of the pancreas or into the adjacent tissues. The parenchyma had a swollen, pink, and sodden appearance. I could not trace any direct cause for the bile-stained peritoneal fluid. There certainly was no fistulous communication between the gall-bladder, the cystic duct, the common or hepatic ducts and the peritoneal cavity, but the tissues in the neighbourhood of the bile passages and pancreas had a sodden appearance and were all deeply stained with bile. There were no signs of

general biliary pigmentation, although the urine contained a large amount of bile, a condition which was noted before death. The liver weighed 51 ounces. A depressed, wedge-shaped, dull yellowish-looking area was found at the edge of the left lobe extending upwards for about half an inch and being about a quarter of an inch in thickness. In appearance it resembled an infarct more than anything else. The kidneys weighed eight ounces. The left kidney was normal. The perinephric fat surrounding the right kidney was bile-stained and showed numerous opaque, milk-white, and orange-yellow spots and patches of fat necrosis. The spleen weighed three and a half ounces. It was quite healthy. The suprarenals were normal

Sections from different parts of the pancreas were examined under the microscope. It was found that the pancreas was not involved throughout. All the sections examined showed areas where the acini and their cells appeared to be quite normal. Irregular-shaped areas were also seen, the central parts of which appeared to be made up of a granular débris, no outline at all of the acini or their epithelial cells being visible. Dotted about in this granular débris were a number of polymorpho-nuclear leucocytes. There were also several patches where this granular débris was stained a bright golden colour (? bilirubin). In places effusion of blood could be seen into the inter-lobular tissue. The blood-vessels generally were distended with blood and some of the smaller ones were filled with thrombi partially organised. At the periphery of the necrosed areas the outline of the acini and their cells could be seen, but the protoplasm of the cells had a very granular appearance and their nuclei were not stained. Some of these cells were stained a bright golden colour and contained granules of this pigment. Outside these the cells were faintly stained and outside these again the acini appeared to be normal. There was undoubted parenchymatous inflammation, necrosis of the glandular tissue, pigmentation, and blood effusion and infiltration. Numerous patches of fat necrosis were seen also in the interlobular connective tissues. Sections stained with carbol thionin blue and examined with a $\frac{1}{12}$th oil immersion did not show the presence of micro-organisms. Cultures were taken and a pure growth of the bacillus coli communis was obtained.

Remarks.—Case 1 was not diagnosed during life. The history of previous attacks of abdominal pain and indigestion spreading over several years, and the acute onset of severe abdominal pain after a late meal of pigeon-pie, seemed to point to perforating gastric ulcer as the most likely explanation of the patient's condition when he was seen on his admission into the hospital. A satisfactory elucidation, however, of the cause of these attacks of pain was found at the necropsy in the gall-bladder, which contained several calculi. A small calculus was also found in the other case, lying in a fold of mucous membrane in the common duct close to the opening of the cystic duct. This association of gall-stones with acute hæmorrhagic pancreatitis is far from being uncommon. If the calculi are formed as a result of changes in the ducts and gall-bladder produced by an invasion of the bacillus coli communis, and as in nearly all of the cases of pancreatitis which have been examined bacteriologically the bacillus coli communis has been found, the invasion of the organ by this organism may have been the cause of this disease, for if the bacillus has ascended the bile duct, the cystic duct, and the hepatic duct it might at the same time just as easily have invaded the pancreas by means of the duct of Wirsung. The diagnosis was cleared up by the operation, fat necrosis being found. The bile-stained peritoneal fluid I shall refer to when discussing Case 2.

The chief point of interest in Case 1 was the finding of fat necrosis outside the peritoneal cavity. No mention of such a possibility is mentioned either in Osler's, Taylor's, or Allbutt's "System of Medicine." Osler[1] writes: "A point of interest is the relation of fat necrosis to pancreatic disease. The areas are found in the interlobular pancreatic tissue, in the mesentery, in the omentum, and in the abdominal fatty tissue generally." Fitz, in his article in Clifford Allbutt's "System of Medicine," chiefly draws attention to sub-peritoneal fat necrosis.

A good deal of experimental work has been done on fat necrosis, but I have not been able to find any note of it as having occurred outside the peritoneal cavity. Flexner[2] and Williams[3] have published the results of their work on the pathology of this curious change in the fat and they both give important summaries of the work of other pathologists. The first pathologist who directed attention to fat necrosis was Balser[4] in 1882; he found it either within the inter-acinous tissues of the pancreas or in the adjacent and distant fat. Langerhans[5] injected the sterilised pulp of fresh pancreas into the peritoneal tissues of rabbits and inflammation resulted with evidence of fat necrosis. He, however, only had one successful experiment out of 12. He satisfied himself that a decomposition of the fat molecule occurred with liberation of the fatty acids and considered that it was due to the action of the fat-splitting ferment. Dettner[6] experimented with pure trypsin which produced a sero-hæmorrhagic effusion in the peritoneal cavity but no fat necrosis. Hildebrand[7] suggested that the hæmorrhage in acute hæmorrhagic pancreatitis was due to trypsin and that the fat necrosis was caused by the action of the fat-splitting ferment. Hlava[8] produced hæmorrhagic pancreatitis and fat necrosis by injecting Klebs-Löffler bacilli into the pancreas after a laparotomy. Rosenbach and Jung[9] experimented with trypsin and with portions of pancreas which they introduced into the abdominal cavities of rabbits. They obtained fat necrosis with pieces of pancreas once out of four times. Flexner's conclusions are as follows:—1. In peritoneal fat necrosis the fat-splitting ferment is demonstrable at certain stages of the pathological process. 2. It is present in greatest amount in the early stages and may disappear in the later ones when the healing is well advanced. 3. Although it cannot be affirmed that steapsin is the direct cause of the necrosis of tissue such an assumption is rendered highly probable by its constant occurrence in the diseased areas, its absence from the healthy fat, and the nature of the pathological changes. 4. The escape of the pancreatic secretion into the peri-pancreatic and pancreatic tissues is the origin of the necrosis and this escape is facilitated chiefly by lesions of the pancreas itself, but also by disturbances in its circulation. Williams concluded that there was some substance in the pancreatic tissue, probably the fat-splitting ferment, which had the power of producing changes in fat similar to those found in fat necrosis.

It will be seen from the above that experimental evidence goes to show that fat necrosis is caused by an escape of the pancreatic secretion into the peri-pancreatic and pancreatic tissues. The changes in the mediastinal and pericardial fat could not be explained exactly in this way, as there was certainly no direct communication between the peritoneal cavity and the pericardial sac. If fat necrosis is due to the action of the fat-splitting ferment of the pancreatic secretion it must have been carried to the pericardial and mediastinal fat by the blood, or by the lymphatic vessels, or by both. It is a well-known fact that a pericarditis or pleurisy may proceed from a peritonitis and that the channel of infection is along the blood-vessels or lymphatics, and I see no reason why the pancreatic secretion should not be carried in a similar manner. The reddish areas of hæmorrhage which were noted in the fat of the mesentery, which were similar in size and form to the areas of fat necrosis, suggested that the factor causing the fat necrosis was carried in the blood-vessels.

In Case 2 the previous history of abdominal pain and indigestion and the acute onset with pain suggested perforating gastric ulcer as the most likely diagnosis to explain his symptoms and condition. The fulness in the upper part of the abdomen, the tenderness situated midway between the umbilicus and ensiform cartilage, and the curious area of dulness made me seriously consider the possibility of acute hæmorrhagic pancreatitis being the disease from which the patient was suffering. The previous history of jaundice and abdominal pain I did not consider to be against this view, as a few months before I had seen a case of acute hæmorrhagic pancreatitis giving a similar history (Case 1). At the necropsy on this case gall-stones were found and fully accounted for the previous attack of abdominal pain and jaundice.

The most striking point of interest about Case 2 and the one I wish to draw particular attention to was

[1] The Principles and Practice of Medicine, p. 494.
[2] Journal of Experimental Medicine, 1897, vol. xi., pp. 413 to 425.
[3] Boston Medical and Surgical Journal, 1897, vol. i., pp. 345 to 348, and 1898, vol. i., 342.
[4] Virchow's Archiv, 1882, Band xc., p. 520.
[5] Experimenteller Beitrag zur Fettgewebsnekrose, Virchow's Fortschrift.
[6] Inaugural Dissertation, Göttingen, 1895.
[7] Centralblatt für Chirurgie, 1895, Band xxii., p. 297.
[8] Centralblatt für Pathologie, 1897, Band viii., p. 792.
[9] Inaugural Dissertation, Göttingen, 1896.

the large collection of clear, bile-stained, serous, sterile fluid found in the peritoneal cavity at the time of the operation. It puzzled us a good deal and many suggestions were made to explain its presence. No fat necrosis was found and the pancreas did not appear to be enlarged, so that the diagnosis of acute hæmorrhagic pancreatitis was given up. It was suggested that possibly the bile-stained fluid might be accounted for by a perforating ulcer of the duodenum, but against this view was the absence of peritonitis, the clear character of the fluid, which proved also to be sterile, and the fact that the duodenum was carefully examined and found to be intact. The gall-bladder at the time of the operation was shown to be full of bile and intact, so that a perforation or rupture of this organ was excluded. The cystic duct was also normal but the bile ducts and the hepatic ducts could not be satisfactorily examined. We thought that possibly one of the ducts had ruptured and that the previous attack of pain and jaundice suggested a gall-stone as being the most probable cause of the trouble. At the necropsy a biliary calculus was found, but it was small and was not obstructing the flow of bile. The tissues in the neighbourhood of the bile-passages and pancreas had a swollen and sodden appearance and were all very deeply stained with bile, but there was no abnormal opening in the gall-bladder, cystic duct, hepatic duct, or bile duct which could allow of the escape of bile. I thought that the inflammatory and sodden condition of the tissues and ducts had allowed of an escape of bile into the peritoneal cavity by means of either the lymphatics or blood-vessels, or by both. Although this peritoneal fluid and the urine both contained large quantities of bile pigment there was no general biliary pigmentation, which seemed a point in favour of a local exudation of bile. A large quantity of bile-stained serous fluid was also found in the peritoneal cavity of Case 1 at the time of the operation, and at the necropsy the tissues in the neighbourhood of the bile passages were stained with bile. Another point of interest in Case 2 was the marked pigmentation of some of the cells and of the débris in the affected areas.

ON THE INFLUENCE OF FATIGUE ON THE MINUTE STRUCTURE OF THE KIDNEY AND LIVER:

PRELIMINARY ACCOUNT.

BY DR. GUIDO GUERRINI.

IN a fatigued organism there circulates, as is known, a very large quantity of particular substances which, when collected and spread through all the system, produce a certain condition the manifestations of which, perhaps, constitute in great part the symptomatology of fatigue. Now, given the presence in the circulation of such substances and given, on the other hand, the great ease with which the cells of the organ react in their minute structure to such conditions, it is not difficult to deduct that in fatigue also the organs will show some change in their cellules. It is just this hypothesis that I have sought to verify. The minute modifications of structure which I saw in the nerve-cells of the cerebral and cerebellar cortex have been already published, and the minute modifications of structure which I saw in the nerve-cells of the spinal marrow will soon be published, but in the meantime in this preliminary note I give the results which I have already obtained as regards the kidney and liver—two organs which from the nature of their functions must certainly be affected by the presence in the circulation of the products of muscular exchange during fatigue. The technical part of the experiments was the same as that which I used for the study of the nervous system. I made several dogs run within an apparatus resembling that used by Grandis for the study of the influence of work, fasting, and temperature on the production of carbonic acid and the diminution in weight of the organism until they evinced symptoms of very evident fatigue. Afterwards I killed the animals with numerous special precautions and sought for the alterations in the minute structure of the kidney and liver caused by the excessive work. All the experiments were begun only after a certain time (the same for all the animals) after the last meal. The results of my experiments are the following.

In the kidney.—The grosser modifications of structure are in the cells of the convoluted tubules and of the ascending part of the loop of Henle. The corpuscles of Malpighi and the collecting tubes are nearly always normal. In the affected cells the modifications of structure are, naturally, in relation with the degree of fatigue undergone by the animal. The more fatigued the dog was the more profoundly altered were the cells. In animals already much fatigued the following appearances may be observed. The protoplasma loses its usual aspect and becomes homogeneous and granular. It appears that the cellular body enlarges, sometimes little, sometimes so much that in a transverse section all the openings of the canals seem to be closed by the swollen cells. The edge between the cells becomes uncertain and sometimes disappears altogether. In animals still more fatigued the minute modifications of the cells of the convoluted tubules are, as I have said, much greater. It is seen, in fact, that the borders of the cells which surround the opening of the canals fray out and break and that the cellular protoplasm shows here and there rarefied points, vacuoles and cracks, and finally crumbles away into a fine detritus which collects in the opening of the tubules. In the midst of this detritus normal nuclei are sometimes found, sometimes lumps or granulous masses which stain like the nuclei. This degenerative process almost always attacks a certain number of cells, but sometimes it is seen only in a group of a few diseased cells which are in the midst of several normal ones.

In the liver.—The minute modifications of structure of the liver cells are much less than are those of the kidney cells, and they appear conspicuously only in the liver of those dogs in which the modifications of structure are the greatest. They are as follows. From the beginning all the cellular protoplasm appears homogeneous, cloudy, and granular. The cellular body enlarges and the edge between the cells becomes uncertain and sometimes disappears altogether. Sometimes the little biliary canals are evidently compressed, whereupon the protoplasma of the liver cells appears rarefied, full of knots, spongy, and very dark from biliary pigment.

These are, in short, the results of my researches on the influence of fatigue on the minute structure of the kidney and liver. I will systematically continue the researches on the other organs.

A SERIES OF ELEVEN OPERATIONS FOR PERFORATED GASTRIC ULCER.

BY G. H. HUME, D.C.L. DURH., M.D., F.R.C.S. EDIN.,
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THE 11 cases in the accompanying table have been operated upon during the past seven years and form a complete list of all the cases of acute perforation and gastric ulcer on which I have operated. The results agree in the main with the most recently published statistics and illustrate both the recent improvement in results and the dependence of this improvement on earlier opportunity of operating. A few remarks suggested by the cases may be arranged under the following heads.

Diagnosis.—In only one of the cases (Case 9) was there doubt when first seen as to the occurrence of perforation. The patient was seen in the night and had quite recovered from the collapse which marked the beginning of the illness. She was left till morning when the signs of commencing peritonitis were too evident to admit of further delay and she was operated on with good result. In another case (Case 3) there was doubt as to the origin of the general peritonitis which was fully developed. There was a history of a previous attack of peritonitis; the present illness was said to have begun with pain and tension in the right iliac region and it was uncertain which of the two—a perforated appendix or perforated gastric ulcer—was the source of infection. An exploration of the region of the appendix was first made with negative result; then the epigastric region was opened and the perforation was found. As a rule it is not difficult to make an early diagnosis. The past history of stomach trouble,

TABLE OF 11 CASES OF PERFORATED GASTRIC ULCER OPERATED ON WITH SIX RECOVERIES.

No.	Sex and Age.	Date of operation.	Interval between perforation and operation.	Situation of ulcer.	Treatment of peritoneal cavity.	Result.
1	F., 20	August 8th, 1893.	48 hours.	Anterior wall near pylorus.	Flushed and drained.	Died.
2	F., 28	June 23rd, 1894.	Not stated in notes.	Not stated.	" "	"
3	F., 30	April 9th, 1896.	48 hours.	Anterior wall near cardia.	" "	"
4	F., 23	Oct. 10th, 1896.	5¼ "	Greater curvature.	" "	"
5	F., 16	Nov. 15th, 1896.	11½ "	Lesser curvature.	" "	Recovered.
6	F., 18	Dec. 1st, 1896.	43 "	Anterior wall.	" "	Died.
7	F., 19	April 9th, 1898.	6 "	" "	" "	Recovered.
8	F., 18	August 19th, 1898.	28 "	Greater curvature.	Wiped dry; no drainage.	"
9	F., 26	April 12th, 1899.	21 "	Pylorus.	Sponged; no drainage.	"
10	F., 18	Nov. 5th, 1899.	7½ "	Posterior wall, near lesser curve.	" "	"
11	F., 27	March 19th, 1900.	7 "	Anterior at cardiac end.	Flushed and drained.	"

the sudden and severe pain with collapse, the epigastric tenderness and rigidity, with soon a slight rise of temperature, are indications enough to justify exploration. Vomiting occurred once or twice in all my cases and in at least one retching was continuous. When this occurs it is of evil import.

Interval since rupture.—In three cases the interval was from 43 to 48 hours and all these cases died. In another fatal case the interval between the occurrence of perforation and operation was the shortest in the list—namely, five and a quarter hours. In this case general peritonitis developed rapidly and was attended with great suffering. The course of this case I think is explained by the fact that shortly after the beginning of the attack a large dose of castor oil was administered. In the cases that recovered the interval ranged from six to 28 hours. In the instance in which 28 hours had elapsed the rupture had taken place when the stomach was empty, absolutely nothing by the mouth was allowed from the time of its occurrence, and at the operation there was so little extravasated fluid that only slight sponging was required.

Position and treatment of the ulcer.—In only one instance was the perforated ulcer found on the posterior wall of the stomach. It was found by turning up the stomach and tearing through the omentum. The treatment of the ulcer was the same in all cases. The edges were not excised but the opening was closed by a double set of Lembert stitches of catgut. A piece of omentum was laid over the site and fixed where this could be done.

Treatment of the peritoneal cavity.—The treatment of the peritoneal cavity has depended on the amount of extravasated stomach contents and general effusion. In Case 5, in which perforation had taken place soon after a meal and 11½ hours before operation, the abdomen was full of grumous fluid with particles of food, and the favourable result was thought to be due to the thoroughness with which the cavity was flushed out and drained. In three cases again the cavity was sponged dry where fluid existed and no flushing or drainage used. This is no doubt the preferable treatment and should be followed where there is only limited and local extravasation.

Newcastle-on-Tyne.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ANTHRAX.

BY EDWARD ALBERT CLARKE, M.R.C.S ENG., L.S.A.

THE following case which I have recently had under my care has a considerable resemblance to the one recorded by Mr. E. C. Bousfield in THE LANCET of Oct. 20th, p. 1133.

On July 14th, 1900, a man requested me to go to see his son who, he said, had scratched his forehead and got erysipelas in it. I went to see the case and found a lad, about 17 years old, who told me that on July 9th he had a pimple on his forehead which he had scratched. On July 12th it had become inflamed and swollen, but as he had no great pain he did not think it serious until the day of my visit, when the swelling had become so great that he could not see out of his left eye. On examining the left side of his head I found a black dry eschar, around which were an inflamed area and a circle of small vesicles. The skin on the left side of the head was swollen and œdematous and all along the border of the sterno-mastoid muscle the skin was raised, red, and swollen. Both upper and lower eyelids were swollen and were so œdematous that it was impossible for him to open the left eye. His temperature was 104° F., his pulse was in proportion, but he did not complain of any great bodily illness. At first sight I took the case to be one of erysipelas, but noticed the general good condition of the patient and the absence of pain, and whilst making up my mind I was struck by the appearance of the eschar and vesicles which seemed to resemble a plate or illustration that I had seen somewhere. The youth was a brush-maker and had been sorting hog bristles which had come from abroad. It then occurred to me that this was a case of malignant pustule and I determined that I would then and there without delay excise it. Having obtained the assistance of my friend Dr. R. Bleasdale chloroform was administered and I made an elliptical incision round the eschar and vesicles about an inch and an half away from their outer border, cutting down deep to the bone and removing a portion of the muscle underneath, irrigating the wound all the time with a 5 per cent. solution of carbolic acid. The bleeding was very profuse as a number of small arteries were cut; this we allowed to go on unchecked until the whole piece, about two inches in its longest diameter and one and a half inches wide, was removed and then, by the aid of pressure forceps, strong carbolic acid, and hot water, it was got well under control. I then filled a hypodermic serum syringe with a 5 per cent. solution of carbolic acid and thrusting the needle beneath the edges of the wound for about one inch I injected the solution in eight or nine different places round the wound. A piece of lint soaked in the 5 per cent. carbolic acid solution was placed over the wound and an ice-bag was placed over all and instructions were left for the patient to have on the next day some strong beef-tea and a mixture containing five-grain doses of sulphate of quinine every three hours. On the following morning (July 15th) the temperature and the pulse-rate had fallen, and beyond the effects of the chloroform and severe shock the patient was doing very nicely; the swelling in the face and neck seemed to be slightly less. From this time to August 2nd I visited him daily, giving him plenty of nourishing food such as beef-tea, port wine, &c., and continuing the application of the 5 per cent. carbolic acid lotion and the ice-cap. He also had the quinine mixture, and during the whole of this time he improved daily. He then went to the seaside and eventually recovered perfectly.

I was unfortunately unable to have the portion of skin removed with the vesicles bacteriologically examined for anthrax bacilli. The interesting features of this case were: (1) that a case of anthrax has not been known in this neighbourhood before; (2) that the evidence distinctly pointed to the foreign bristles being the source of infection; and (3) that the prompt treatment by excision and thorough disinfection had been successful in a case which otherwise might have been fatal. Although there was no bacteriological examination I am convinced from the eschar and

the vesicles, the œdematous swelling, and the slight pain in proportion to the local signs, that there was no doubt of the disease being anthrax.

Dukinfield.

AN INTERESTING CASE OF AMENORRHŒA.

By WILFRID J. H. HEPWORTH, L.S.A.

I WAS consulted some months ago by a woman who was desirous of ascertaining whether she was pregnant or not. She was 23 years of age and had two children, the youngest being four months old. Her reason for thinking herself pregnant was that she had only once menstruated since her infant was born, and that was six weeks after the birth. On the other hand, she thought herself unlikely to be pregnant, for she had not experienced any of the sensations that she had noticed in her previous pregnancies, such as painful breasts, morning sickness, &c. Menstruation commenced at 12 years of age; there was then a period of six months' amenorrhœa and then regularity up to her marriage. Both labours were natural, but she did not nurse either child. She was preparing to pay a visit to the country when she consulted me and I advised her to come to see me again in six weeks' time (i.e., when she returned home), as I could not find any physiological or pathological reason for the amenorrhœa. According to promise she came to see me at the expiration of the six weeks, but it was to inform me that menstruation had returned two days after her leaving town and again a month later. Three months after this she again came to me with the same story of amenorrhœa as described above. She had been in London three months and had not once menstruated, though her periods had been regular whilst she was away. I recommended her to try another change of air. She did so and she was once more restored to regularity. She now leaves London for a couple of days each month when she at once becomes "unwell," though this is not the case if she remains in town. I have recommended her if possible to take up her abode in the district in which she resided previously to her marriage.

Old Basford, Nottingham.

SURGICAL EMPHYSEMA OF THE EYELIDS.

By CHARLES LEO BIRMINGHAM, M.D. R.U.I.

ON Oct. 13th, 1900, a patient of mine who was walking along a public road and carrying an open umbrella for protection from the rain had his umbrella suddenly blown against his face. One of the ends of a rib of the umbrella struck the right eye close to the caruncula lacrymalis. This caused a slight wound which did not bleed. There was no pain and my patient continued his walk. About three hours later he had returned to his dwelling and was sitting in an armchair removing his boots when he paused to blow his nose. Immediately his eye was closed with an inflated swelling of both the lids. I was summoned in great haste and arrived about 15 minutes after the onset of the swelling when I found that the enlargement of the lids was so great that not even the eyelashes could be seen. Gentle pressure on the lids gave rise to a "crackling" sensation. On hearing of the injury I at once diagnosed surgical emphysema of the eyelids. Without delay I began to apply gentle, slow, continuous pressure, using pads of lint soaked in boric acid solution beneath my finger ends. Within an hour I had the eyelids emptied of air. I left a pad of lint on the eye firmly fixed with a bandage. Recovery was subsequently uninterrupted and the patient is now able to blow his nose again. There was slight epistaxis on the third day after the injury. My explanation of the occurrence of the emphysema is that the lacrymal apparatus was ruptured at the junction of the canaliculi and the sac. None of the books on surgery which I have been able to consult records any case of injury such as I have described.

Westport, Co. Mayo.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

SOUTH DEVON AND EAST CORNWALL HOSPITAL.

A CASE OF SARCOMA OF THE SIXTH RIB IN THE REMOVAL OF WHICH THE PERICARDIAL AND LEFT PLEURAL CAVITIES WERE OPENED; RECOVERY.

(Under the care of Mr. C. WHIPPLE and Dr. H. W. WEBBER.)

THE frequency of the occurrence of malignant disease of the rib is small, and especially rare is primary malignant disease in this situation. It is generally necessary in attempts to remove the growth in such cases to open the adjacent pleura, or in exceptional cases the pericardium also may be involved in the course of the operation,[1] as in the case reported below.

A man, aged 46 years, a farm labourer, was admitted into the South Devon and East Cornwall Hospital on Sept. 18th, 1900, for a tumour in the left side. The history given was that three months previously a small pimple formed over the position of the swelling; this broke and discharged matter owing (according to the patient) to the friction of his braces. A lump had appeared in the situation of the pimple which had gradually grown larger and caused him considerable pain. On admission he was seen to be a rather sparely-built man; he had formerly served in the army in India and while there had suffered from "fever and blood poisoning." Over the sixth rib, just external to the apex beat of the heart, was a tumour of the size and shape of a hen's egg with its long axis in the course of the rib; it was firm at the periphery, soft and semi fluctuating in the centre, firmly adherent to the rib, but not appreciably involving the skin. The skin over the tumour and for a little distance around it was marked with dilated veins.

On Sept. 23rd, under chloroform, an incision five inches in length was made over the tumour in its long axis and the skin and subcutaneous fat were dissected off it. The rib was then cleared at points half an inch beyond the limits of the tumour and the bone with the tumour between these points was excised. In doing this the cavities of the left pleura and of the pericardium were freely opened, and the result was a hole some three inches by one inch, into which the apex of the heart bulged at each beat, and at the bottom of which the left lung collapsed (by the air admitted) could be seen lying. The screw-like mechanism of the heart in systolic contraction was well seen. The wound having been swabbed dry was closed by several interrupted fishing-gut sutures through the skin and the subcutaneous tissue. Dressings of sterilised gauze and wood-wool were applied. In the evening the patient's temperature had risen from 98·2° F. in the morning to 101·6°; he was unable to lie down and was evidently developing an attack of bronchitis. The dressings required packing with wood-wool, as much blood-stained serum had oozed through. On Sept. 24th dyspnœa and orthopnœa were marked with frothy mucoid expectoration and inspiratory rhonchi. The pulse was 100 per minute and the respirations were 32, the temperature having fallen to 99°. In the evening the temperature rose to 102·4° and the dressings, which were soaked with blood-stained serum, were changed. On the 25th the morning temperature was 100·2° and the respirations were 36; dyspnœa and expectoration from bronchitis were rather troublesome. On the 26th the temperature in the morning was 99° and in the evening 99·6°; the respirations were 28 per minute. The dressings were changed again. On the 28th the evening temperature was 101°; the respirations were 28. On changing the dressings

[1] Quenu et Longuet: Les Tumeurs du Squelette Thoracique, Revue de Chirurgie, 1898, p. 365.

the edges of the wound were found to be somewhat red, so every other stitch was removed. A little slightly blood-tinged serum escaped with each forced expiration from between the stitches, evidently from the serous cavities. Hot boric fomentations were ordered every two hours to the wound. On the 29th the wound was cleaner and more healthy-looking, so dry dressings were re-applied. The morning temperature was 98° and the evening temperature was 99°; the respirations were 24 per minute. The bronchial attack was subsiding and the dyspnœa and expectoration were only slightly troublesome. From this date the patient gradually recovered and was discharged to the Pearn Convalescent Home on Oct. 15th. On discharge the wound was soundly healed, a somewhat depressed scar which bulged a little with each beat of the heart being present at the site of the operation. The venules round it were still dilated but to a much less extent than previously to the removal of the tumour.

Remarks by Dr. WEBBER.—I am indebted to Mr. Whipple for kind permission to operate on the above case and to record the notes and I consider it worthy of record as in few cases has the pericardial cavity been freely opened in the manner above described. Dr. F. G. Bushnell prepared in our clinical laboratory microscopic sections of the growth which showed that it was a periosteal spindle-celled sarcoma with numerous hæmorrhages into its substance; its invasion of the costal cartilage was well shown at one part of the section.

PENRHYN HOSPITAL, BETHESDA.

A CASE IN WHICH A VARICOSE CONDITION OF THE INTERNAL SAPHENOUS VEIN WAS COMPLICATED BY IRRITATION OF THE INTERNAL SAPHENOUS NERVE; OPERATION AND CURE.

(Under the care of Dr. E. A. MILLS-ROBERTS.)

AT the present day the operation of excision of varicose veins is so very simple in performance and satisfactory in result that it is somewhat difficult to realise the hesitation with which surgeons formerly operated on veins and the fatal results which were only too often obtained. The mortality after excision is very small, probably less than 1 per cent., and the two most common causes are sepsis and embolism.

A man, aged 42 years, consulted Dr. Mills-Roberts in June, 1895, complaining of what he described as "severe pain" in the left leg. On examination he was found to be suffering from a varicose condition of the internal saphenous vein of the leg. The condition did not seem to be serious; the chief varices consisted of a considerable bunch in the region of the knee, there was an enlargement of the vein at the mid-calf, and there was a third enlargement contained in old cicatricial tissue about two inches above the internal malleolus. The painful area extended from about four inches above the internal condyle down the posterior and internal aspect of the leg to the ankle. There was a very distinct dark nodule in the cicatricial varix that, he complained, was acutely painful. The cicatrix was due to an injury received when he was 10 years old, the result of being kicked or trodden on by a horse, resulting in a necrosed condition of the lower third of the internal surface of the tibia. The necrosis and resulting ulcer took 12 months to heal and during this time "86 bits of bone were removed from it." He first noticed the varicosed condition of his leg when he was about 20 years old. The patient was employed as a slate quarryman and his wife kept a public-house where they resided. He confessed to free indulgence of stimulants but not to excess and he was never inebriated. He had a particularly healthy family history. The usual treatment of rest, bandage, and tonics was advised. Circumstances would not allow him to give up his employment. The treatment seemed to give him little or no relief, and he evidently thought not only that it was ineffective but that it rather aggravated the symptoms.

In the spring of 1899 the pain became so intolerable and severe that the patient was forced to give up his employment. While absolutely quiet he did not suffer much discomfort, but if he indulged in anything like activity he had a return of all the painful symptoms. In the autumn of the same year he again consulted Dr. Mills-Roberts who examined him carefully and found no evidence that the condition was worse. It was unilateral, and from any evidence to the contrary the varicosity was confined to the length of the vein, extending from two inches above the ankle to the bunch in the region of the knee. The patient was urged to undergo a radical operation and to have the varices removed. He seemed to be rather diffident about following this advice and asked if there was any objection to his having further advice. No objection was made. He in consequence consulted two Liverpool surgeons, who endorsed Dr. Mills-Roberts's views, and returned seemingly satisfied and anxious to undergo the operation. He was admitted to Penrhyn Hospital on May 4th, 1900, the operation being performed on the 7th.

The patient having been anæsthetised an incision about five inches in length was made in a longitudinal and slightly transverse direction, extending along the greatest diameter of the bunch in the region of the knee, the mid-point being behind the inner tuberosity of the tibia. After some trouble and very careful and prolonged dissection the internal saphenous nerve was found and was separated freely downwards as far as the incision would allow, after which a few gentle pulls were given. The vein was then tied at the lower end of the incision and cut. The nerve in the meantime was kept out of harm's way by means of a hooked retractor. The dissection of the vein was continued upwards, four well-developed and enlarged branches being found running somewhat transversely towards the anterior mid-line of the leg. Five inches of the main trunk of the inner saphenous vein were removed—that is, the length of the incision—and about an inch of each of the branches mentioned. Attention was next directed to the mid-calf enlargement, and by means of an incision two and a half inches long, that length of the vein was removed. The cicatricial varices were left *in statu quo*, Dr. Mills-Roberts, not feeling justified in interfering with what had been a long-healing ulcer. The incisions were drawn together with a few sutures and were dressed with carbolic oil and iodoform. The patient made a somewhat slow and uneventful recovery. His temperature on the evening of the operation (May 7th) was 99° F.; it continued the same on the 8th, on the evening of which he had his bowels well moved. On the 9th the temperature was normal and continued so. He was dismissed on June 16th perfectly convalescent and suffering no pain. The varicosity contained in the old cicatrix seemed to be smaller, and it was hoped that it would disappear. The nodule was quite painless.

Remarks by Dr. MILLS-ROBERTS.—1. What was particularly interesting about the above case was the unusual severity of the pain which the patient suffered. I could only account for it by the fact that his employment necessitated frequent and often prolonged work in the kneeling position, sometimes all day and often for four or five hours at a time. The bunch at the knee must have pressed on the internal saphenous nerve, the pressure being considerably increased during the time he was in the kneeling position. 2. Was the ulcer he suffered from when a child the primary cause of the varicose condition? 3. The blood lost during the operation was practically *nil*. 4. The delay in healing was possibly due to the patient's "moderate alcoholic tendencies."

I saw the patient on July 24th. He was then quite free from pain and was perfectly able to resume his employment, but on account of the liability of the recurrence of the condition I have advised him to find some employment less laborious. The varicosity in the cicatricial tissue has disappeared, there is no sign of the nodule, and there is absolutely no pain.

ROYAL UNITED HOSPITAL, BATH.—The seventh annual amateur performances in aid of the funds of the Royal United Hospital at Bath will be held at the Theatre Royal during the week commencing Dec. 10th. There will be nine performances, and *Iolanthe* and *The School for Scandal* are the pieces selected.

UNIVERSITY OF CAMBRIDGE.—Dr. G. E. Herman has been appointed an examiner in midwifery, and Mr. C. T. R. Wilson, F.R.S., an examiner in physics for medical degrees.—Professor Alexander MacAlister, M.D., F.R.S., has been elected President of the Cambridge Philosophical Society.—The total of the donations paid, or promised, to the University Benefaction Fund now exceeds £66,000. Of the donations, a number are specially assigned to the erection of the new buildings for the medical school.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Laboratory Meeting.

A MEETING of this society was held at the laboratories of the Royal Colleges of Physicians of London and Surgeons of England on Nov. 6th, Mr. WATSON CHEYNE, the President, being in the chair.

Mr. WALTER EDMUNDS exhibited a dog which as the result of Total Extirpation of the Thyroid four days previously showed marked weakness and rigidity of the limbs with some tremor, and recession of the eyeballs.

Dr. W. D. HALLIBURTON and Dr. F. W. MOTT made a communication on the Chemistry of Nerve Degeneration, giving further results of their experiments in respect to the occurrence of choline in nerve degeneration and the chemical and physiological tests for that substance.

Dr. F. W. PAVY, Dr. R. L. SIAN, and Dr. T. G. BRODIE made a communication and demonstrated some experiments on Phloridzin Glycosuria.—Dr. PAVY remarked that when this substance was injected into the renal artery of a dog it produced the immediate appearance of a large quantity of sugar in the urine from the kidney on the same side and presently sugar appeared in the urine from the ureter on the other side. Whether taken into the stomach, or injected subcutaneously or intravenously, phloridzin produced a very large quantity of sugar (amounting even to 10 per cent.) in the urine. The source of the sugar was an enigma. It might come from the general system or it might be produced by the action of the kidney on the blood. He referred to experiments in this subject by Zuntz.

Dr. A. E. RUSSELL and Dr. BRODIE exhibited some experiments upon the Cardiac Reflexes, showing that stimulation of the central end of the pulmonary branches of the vagus slowed the cardiac rate.

Dr. W. E. DIXON and Dr. BRODIE exhibited some experiments on Pulmonary Motor Mechanism, showing that pilocarpine produced muscular spasm of the bronchioles, and that ergot produced engorgement of the lung by constricting the peripheral arterioles.

GLASGOW SOUTHERN MEDICAL SOCIETY.

A Discussion on the Plague.—A Fresh Specimen of Hydatid Mole.

THE third meeting of the session of this society was held on Nov. 1st, Dr. WILLIAM WATSON, the President, being in the chair.

Dr. J. W. ALLAN introduced a discussion on the subject of the Plague and commented on the fact that the disease seemed to be dying out in Glasgow. Some people were inclined to say "supposed plague," a statement which in his opinion was foolish, for the advice of experts and bacteriological examination had proved the presence of the disease beyond doubt. So far Glasgow had been fortunate in the smallness of the number attacked and in the number of fatal cases. While, however, there remained even only a few cases in the city the position was still serious on account of the interference with commerce and shipping. Failure to detect and deal with the early mild cases might result in the development at a later stage of a more virulent form of the disease and also the conversion of the city into an endemic centre. According to Professor Simpson "two features are specially characteristic of plague, first, the slow, irregular, and gradual manner in which the disease acquires a hold over a locality into which it is imported and which may later become the scene of an epidemic; and secondly, the obscurity which often surrounds the earlier cases." From this statement it could be understood how important it was to deal quickly and thoroughly with early cases of the disease. Of the types of plague which he had seen at Belvidere Hospital the impression he formed as he saw them at the time was that they showed nothing characteristic until the local manifestation had been revealed. In one case the facies suggested to him typhus fever and in that of an old woman very ill bad typhus fever. The lesson seemed clearly conveyed that bubonic plague might easily be missed unless it was expected. Dr. Allan then proceeded to describe briefly the various types of plague as enumerated by Professor Simpson and Mr. Cantlie of London—viz., (1) the larval, ambulant, or abortive type, or pestis minor; (2) the bubonic; (3) the pneumonic; (4) the intestinal; (5) the typhus; (6) the septic; (7) the nervous; and (8) the puerperal. In view of the different varieties of the disease of plague the diagnosis was no easy matter and the mild or larval type might readily be overlooked. Positive information, however, might be obtained by the aid of the microscope, and he would point out the value of "association" as a key in doubtful cases. What might be called the "house affection" or the "family connection affection"—the association by personal contact—was to be regarded as a valuable point in the diagnosis. Speaking of the variable nature of the malignancy of plague Dr. Allan gave some interesting information. Quoting from the "Memorandum on the Progress of Levantine Plague in 1878–79, including the reappearance of the Disease in Europe," by Mr. N. Radcliffe, he showed how at first the disease at Vetlianka, on the Volga was of a mild glandular form, but that it was succeeded in time by a more virulent type, and finally ended in the pneumonic form in which the mortality was 100 per cent. This increased severity of the plague at Vetlianka was attributed to the approach of winter which caused the inhabitants to pack themselves in their ill-ventilated stove-heated houses. With regard to the geographical distribution of the disease it had been known for years in India and China. Endemic in certain parts of these countries violent outbreaks spread from time to time. It was only too evident that the disease had now travelled beyond their boundaries probably by commercial relationships and had become pandemic. In conclusion, Dr. Allan remarked, seeing that plague could assume so many clinical aspects and that the possibilities of its re-introduction to Glasgow were neither few nor remote, it behoved the medical profession to keep on the alert for some time to come and to report promptly to Dr. A. K. Chalmers, the medical officer of health, all doubtful or suspicious cases. Let them not be lulled into a false security, for in that lay the greatest danger of all.—Dr. CHARLES E. ROBERTSON gave a short account of the illnesses of the patients Malloy who in hospital were recognised as the first cases of plague. After a consultation with Dr. Thomas Colvin, who had also visited the Malloy family, both concluded that they had an infectious disease to deal with and that the patients should be isolated in hospital. Accordingly the patients were then notified and removed as cases of doubtful enteric fever. Dr. Robertson further remarked that during his attendance on the family the cases presented features which, after excluding poisoning by irritant ingesta, suggested typhus fever to his mind.—Dr. THOMAS COLVIN remarked that as Glasgow had no special port sanitary medical officer to detect the introduction of infectious diseases from foreign ports the city's first line of defence was the general practitioner, to whom the present discussion was of the utmost importance. He thought that one practical outcome of the discussion would be a resolution to the effect that the sooner the corporation appointed a port sanitary medical officer the better for all concerned. In his opinion it was a great blessing for the community that so early in the outbreak of plague in the city they found no less than four cases of that disease in the same household. It was the association of the four cases that enabled him to say without any difficulty that whatever the exact nature of the disease was it must be infectious. A consideration of the same circumstance also must have helped to determine the provisional diagnosis of plague in Belvidere Hospital. Another important fact the plague brought out was how little was yet known of the exact nature of natural immunity from any of the infectious diseases. Charles Malloy was brought into the closest personal contact with his brother who died from the plague. He slept with him, ate and drank out of the same dishes, nursed him as best he could for the greater part of a week, and yet he did not take the disease. Mrs. M.—another case of Dr. Colvin's—was also brought into the closest contact with her daughter ill with the plague for 18 days and escaped the disease. On the principle of phagocytosis it might be said that they escaped because their leucocytes were able to digest the plague bacilli. But the question still remained, Why were their leucocytes able to do so, especially when it was known that both "contacts" were much run down for

want of sleep and of proper food? Dr. Colvin then discussed at length the differential diagnosis of plague and enteric fever as seen in general practice, and in summing up said that in his opinion plague in the forms met with in Glasgow simulated many other diseases and the only valuable differential sign was the bubo. With regard to the bubo they had to exclude syphilis, gonorrhœa, and septic irritation. Finally, to complete the diagnosis the plague bacillus had to be found by bacteriological examination.—Dr. MATTHEW DUNNING gave an account of the cases of plague that he had observed in his practice during the epidemic.—Dr. A. K. CHALMERS in the course of his remarks gave an interesting history of the course of the plague in Glasgow. With regard to its similarity to typhus fever as regards the rash occasionally found, it was to be noted that the rash of plague resembled the late stage of the typhus rash and, moreover, was found earlier in the disease. While the plague as seen in Glasgow might reasonably be called a mild form of the disease it was yet true that the mortality was considerable, being no less than 47 per cent., and approaching the mortality of the epidemic in Cairo. In conclusion, Dr. Chalmers spoke at length as to the probable means of transmission of plague, the causes of its variable malignancy, and the value of serum injections.

Dr. JAMES WEIR showed a fresh specimen of Hydatid Mole which was examined with interest by the members.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 2nd, Dr. Gordon Black, the President, being in the chair.—Dr. L. A. Rowden read notes of a case of Descending Landry's Paralysis in a child. The child, a lad, aged 10 years, had whooping-cough in 1897 and cholera in 1898, but had since been in good health. On Sept. 14th, 1900, he slipped into a pit but seemed none the worse. On the 15th he appeared to have a stiff neck and on the 16th he did not seem very well and had a restless night. On the 17th there was paralysis of the muscles of the neck and of the deltoids with a temperature of 103° F. On the 18th there was complete paralysis of the neck, arms, forearms, &c., and intercostals, and later the muscles of the legs, face, and tongue became affected. The child died completely paralysed in all his muscles at 1 A.M. on the 19th from cardiac failure. The diagnosis was based on (1) progressive, symmetrical, motor paralysis; (2) no disturbance of sensation; (3) absence of rigidity, twitching, pain, or tremor; (4) mental functions unimpaired; and (5) no loss of control over the emunctories. There was no evidence of scarlet fever or diphtheria in the case, and the fall seemed to be a coincidence, as there was no injury to the spine.—Dr. Wardrop Griffith supported Dr. Rowden in his diagnosis of Landry's disease and referred to other instances where the paralysis was descending instead of ascending. He argued that the simple conception of a lesion, organic or nutritional, passing along the cord was often at variance with the march of the palsy, as in many of the ascending cases the arms were affected before the trunk. On the other hand, a purely peripheral affection of the nerves, though it accounted for most of the phenomena of the disease, and notably for that variability in the combination of motor and sensory symptoms which Landry himself had pointed out, did not account for all, and the association of right-sided facial palsy with paralysis of the external rectus of the same side, which was observed in one undoubted example, pointed to a lesion of the closely associated border of the seventh and sixth cranial nerves. He favoured the view, therefore, that Landry's disease was due to a toxic process, affecting various parts of the nervous system in different cases, and in some instances leading to demonstrable inflammatory lesions.—The President, Dr. A. G. Barrs, and Dr. J. Campbell also discussed the case.—Dr. Rowden, in reply, pointed out the similarity between Landry's paralysis and infantile paralysis and suggested that the former might also be caused by an acute anterior poliomyelitis but of a more regular and spreading character than in the latter.—Dr. E. F. Trevelyan read a paper on six, mostly severe, cases of Diphtheritic Paralysis, including remarks on albuminuria and ataxia in diphtheritic paralysis and on the prognosis and treatment of this affection.—Dr. A. G Barrs spoke of the importance of complete rest in bed until the knee-jerk had returned in cases of diphtheritic palsy in which it was absent, for so long as the knee-jerk was absent the patient was the subject of diphtheritic palsy. He also referred to the importance of avoiding all restrictions in diet even in the acute stage of the disease beyond those imposed by the difficulty in swallowing and the loss of appetite inevitable to an acute infective state.—The President, Mr. J. W. Draper, Dr. A. Christy Wilson, Dr. S. Lodge, jun., Dr. H. J. Campbell, and Dr. J. E. Eddison also took part in the discussion.—Dr. Trevelyan, in reply, thought that the time of the re-appearance of the knee-jerk was too variable and sometimes too delayed to be taken as a guide in the question of rest.—The following cases, pathological specimens, &c., were shown:—Dr. Gordon Sharp: Some New Drugs.—Mr. E. Ward: (1) A Mauser Bullet Wound of the Lumbar Region received at Willow Grange; immediate paraplegia; recovery after a long interval; and (2) a case of Gastro-jejunostomy, with illustration of a Method of Using Murphy's Button.—Dr. A. G. Barrs: (1) Gangrene of the Lung; (2) Retro-peritoneal Growth; and (3) Tuberculous Disease of the Supra-renal Capsules.—Mr. W. E. Bennett (Otley): A patient who 10 years ago was believed to be the subject of Intracranial Tumour.—Mr. B. G. A. Moynihan: (1) Four cases of Molluscum Fibrosum in the same family; (2) Tumour connected with the Vagus Nerve removed from one of the above patients; (3) a Skiagraph and Plaster Cast of a Sub-astragaloid Dislocation of the Foot; (4) a Skiagraph of a case of Club Hand; (5) a case of Hypertrophic Osteo-periostitis following Gonorrhœa; and (6) a large Fibro-cystic Tumour of the Uterus removed by Kelly's operation.—Dr. T. Wardrop Griffith: (1) Premature Closure of the Foramen Ovale; (2) Fragilitas Ossium; (3) Raynaud's Disease associated with Ichthyosis; and (4) Lupus almost completely cicatrised.—Mr. Lawford Knaggs: Intestinal Obstruction resulting from an operation for Radical Cure of Hernia and depending upon a congenital abnormality.—Mr. Mayo Robson: Chronic Osteitis and Abscess of the Femur.—Dr. Barrs and Mr. Lawford Knaggs: A case of Duodenal Stricture in a youth, aged 17 years; pyloroplasty.—Dr. J. B Hellier: (1) Pregnant Uterus with Myoma removed by Abdominal Hysterectomy; and (2) Bilateral Ovarian Abscess removed by Abdominal Section.—Dr. E. F. Trevelyan: (1) A case of Juvenile Phthisis in a girl, aged 14 years, who had been under observation for some years; and (2) A case of Hemiplegia of slow onset in a syphilitic subject; improvement under anti-syphilitic treatment.—Mr. H. Secker Walker: A case of Rodent Ulcer of the Orbit treated by removal and skin-grafting.—Mr. C. J. Wright: Parts from a case of Ectopion Vesicæ with Absence of the Large Intestine; the child lived five days.

PLYMOUTH MEDICAL SOCIETY.—A clinical meeting of this society was held on Oct. 27th, Mr. G. Thom, the President, being in the chair.—Staff-Surgeon W. M. Craig, R.N., showed a young man who four months previously sustained a Fracture of the Lower End of the Humerus and subsequently exhibited signs of Divided Musculo-spiral Nerve. This nerve was exposed between the supinator longus and the brachialis anticus, the distal portion being involved in callus; after freshening the ends they were connected by means of two inches of each sciatic nerve of a freshly-killed rabbit, laid side by side and fixed with fine silk. Now, two months after operation, there was a decided increase both in movements of wrist and sensation.—Mr. W. L. Woollcombe showed: 1. A man, aged 35 years, on whom he had operated four months previously for Malignant Disease of the Transverse Colon with almost Complete Obstruction, removing eight inches of the transverse colon with omentum and four inches of jejunum which had become adherent to, and infiltrated by, the growth. The small bowel was united by means of a Murphy's button and the large by Mayo Robson's bone bobbin. Several infected glands lay in the meso-colon, one close back against the pancreas, and this necessitated removal of a large wedge of meso-colon. The operation was completed in less than two hours, and during it five pints of saline solution with one ounce of brandy and ten minims of liquor strychniæ were given intravenously. Between the fifth and seventh days a slight leakage occurred from the colon and a localised collection of pus formed which was evacuated. The button passed on the nineteenth day. Five weeks after operation the patient weighed 8st. 13lb. He now weighed 11st. 8lb., a gain of nearly 3st. Motions were formed and of the size of a working-man's thumb. 2. A coal porter, aged 35 years, the subject of Double Popliteal Aneurysm, each with a false sac. Pain was first noticed two weeks before coming under observation,

when his leg resembled a large, rapidly-growing sarcoma of the head of the tibia with glazed and discoloured skin over it. However, a few days produced such a change that leaking aneurysm was diagnosed. The sac was laid open and the vessel was secured on either side of the opening. Blood had burrowed all over the calf and produced much disorganisation of muscles. It was subsequently found that a portion of vein had been removed with the artery, being intimately adherent, and a few days later gangrene of the tips of the toes set in. Three weeks later, whilst still in bed, stiffness was complained of in the left calf and a similar condition was found to be starting there. Three days produced a great increase, so that the femoral artery was tied at the apex of Scarpa's triangle. Now, three months later, the result was excellent. Both knees were freely moveable, painless, and free from swelling or pulsation. The toes had not yet completely separated, but there was no spread of gangrene. The man was healthy, with no sign of syphilis or kidney mischief. —Mr. F. E. Row showed two patients on whom he had operated for Radical Cure of Hernia by clearing and removing the sac through a small incision, tying it as high as possible and allowing the stump to fly back. There were no sutures in the canal or ring. The first man was 55 years of age and had had the operation done on both sides three years ago. The second was a young man operated on three months ago.—Mr. C. H. Whiteford showed: 1. A Breast removed by Halstead's Method in which the operation was followed by sloughing of part of the axillary flap. It was suggested that this flap should be reflected at the end instead of early in the operation, and that the preliminary incision should not be carried into the fat. The operation lasted four hours, was well borne, and was followed by neither shock nor sickness. 2. A Modification of Paul's Tube for Drainage of Distended Intestine, having an opening on either side instead of only at the end, thus obviating blocking of the opening by the mesenteric border of gut pressing against it.—Mr. R. H. Lucy read notes of a case in which whilst delivering a kidney for incision the pedicle tore through and the kidney (a useful one) was thus lost. The pedicle fortunately remained in the grasp of the left hand and was secured without much difficulty.—Dr. F. G. Bushnell showed: (1) Slides illustrating Diseases of the Uterus; (2) films illustrating Leucocythæmia, Pernicious and Chlorotic Anæmia; and (3) lantern slides of micro-photographs of Diseases of the Breast.—Mr. G. Jackson, secretary of the Devon and Cornwall Branch of the Incorporated Practitioners Association, drew attention to an attempt on the part of the Commercial Travellers Benevolent Association to establish a medical club in connexion with the local branch of the association with remuneration for the medical officer at the rate of 1*d.* per week per member, and gave notice that at the next meeting of this society he would move a resolution condemning their action and calling upon practitioners in the district to refuse to accept the post of medical officer. There was a general feeling that the rate of remuneration was totally inadequate to the status of the proposed members of the association and that gentlemen occupying the position of commercial travellers were not the class of persons who should be attended on contract terms at all.

BRITISH ORTHOPÆDIC SOCIETY.—A meeting of this society was held at the Royal Orthopædic Hospital, London, on Oct. 27th.—Mr. H. A. Reeves showed the following cases: (1) Contraction of Toes following Cauterisation of a Nævus of the Dorsum of the Foot, accompanied by Exostosis of the Tibia; (2) Paralytic Genu Valgum with Lateral Curvature of the Spine; (3) Congenital Talipes Equino-varus, for which he had removed the upper articular surface of the astragalus; and (4) two cases of Talipes Calcaneo-valgus, in one of which he had performed Arthrodesis. It was important in such cases to straighten the contracted sole before proceeding to rectify the position of the os calcis.—Mr. Reeves also showed photographs of a case of Charcot's Disease of the Ankle in a woman 52 years of age. She could not walk at all. He removed the loose and degenerated articular cartilages and the patient left the hospital able to walk well with instrumental support.—Mr. Reeves also showed the Bones of the Foot and Lower Half of the Leg from a case of Congenital Absence of the Fibula, &c.—Mr. D'Arcy Power, Mr. Chisholm Williams, and Mr Muirhead Little discussed the cases.—Mr. Reeves also showed photographs of a case of Paralytic Deformity of the Elbow and Wrist due to Congenital Hemiplegia. He divided the biceps and straightened the elbow, but a sharp attack of arthritis followed. The patient's age was 28 years. He divided the palmaris longus and flexor carpi radialis with excellent results. He wished to point out that it was seldom necessary to divide the deeper tendons in such cases, even when of long standing.—Mr. Muirhead Little showed a child, two months old, suffering from Congenital Talipes Calcaneo-valgus and having a tumour (so-called hæmatoma) of the Left Sterno-mastoid. Labour had been tedious and difficult, but the head had presented and forceps were not used. He hoped to be able to keep the case in view to see if wry-neck followed.—Mr. D'Arcy Power referred to his investigation of this subject. Out of 50 or 60 cases of tumour of the sterno-mastoid only three or four patients came up for tenotomy afterwards.—Mr. Muirhead Little showed an apparatus designed to strengthen any group of Muscles of the Ankle and Foot by means of Voluntary Exercises. The resistance to be overcome was furnished by means of weights attached to cords running over pulleys. He demonstrated its use on a child and pointed out that it was useful in all cases of talipes, when there was not too extensive paralysis, and also for flat feet. To encourage children to use it an electric bell was fitted, which was so arranged as to ring when the weight was lifted far enough.—Mr. A. H. Tubby read a paper on the Treatment of Deformities of the Hand and Fingers. As regards Dupuytren's contraction, he had found that open incision and dissection of the thickened fascia and its removal as far as possible gave good results in suitable cases, but the surgeon himself must see that aseptic conditions were attained or the result would be bad. All bleeding must be quite stopped before the wound was closed. Careful asepsis must be persevered with until every scab had disappeared. As regards club hand, he had not operated on such cases, preferring to treat them by splints. If any operation were needed he should prefer M'Curdy's. Mr. Tubby then discussed the functional prognosis of tendon suture in the hand, &c.—Mr. Noble Smith and Mr. Little spoke, and Mr. Tubby replied.

NEWCASTLE-UPON-TYNE CLINICAL SOCIETY.—The first meeting of this society for the present session was held on Nov. 1st, the retiring President, Dr. H. Brunton Angus, being in the chair. The following officers were elected for the session:—President: Dr. Frank Hawthorn; vice-president: Dr. Ogden Watson Ogden; treasurer: Dr. W. E. Alderson; secretary: Mr. T. G. Ouston; committee: Dr. R. P. R. Lyle, Dr. T. Beattie, Mr. G. Foggin, and Dr. A. M. Martin. —Dr. Angus showed a man, 58 years old, with a large Pulsating Tumour on the Top of the Head. There was a history of severe blows on the skull eight years and one and three-quarter years before. At this latter period the growth was explored and removed by Mr. F. Page, who found it, after trephining the skull, to be outside of the dura mater. The growth was a pure angeioma but recurrence had gradually taken place. No primary cause, such as a thyroid tumour, could be found, but Dr. Angus considered the growth to be a secondary one.—Dr. R. A. Bolam, Dr. Beattie, and Mr. Ouston discussed the possible origin of the growth.—Mr. W. H. Vickery showed a child, nine months old, from whose thigh a Lipoma weighing 12½ ounces had been removed. The tumour (which was exhibited together with a photograph taken prior to operation) extended from the ischial tuberosity to the popliteal space. The only difficulties presented in removal were from its adherence to the great sciatic nerve and shock to the child.—Dr. Hawthorn, Dr. Angus, and Mr. Ouston commented upon the case.—Dr. Colles (for Dr. Coley) showed a boy suffering from symptoms resembling an advanced stage of Pseudo-Hypertrophic Paralysis. The feet were in a position of talipes equinus.—Dr. Beattie and Dr. Martin agreed in the above diagnosis as against anterior polio-myelitis.—Dr. Colles (for Dr. W. Beatley) showed a boy with Tumours in both Iliac Fossæ. He also had enlarged lymphatic glands in the neck which had suppurated previously and in one axilla. The tumours had remained of the same size for three months. There had been no rise of temperature for the same period and no alterations in the blood-cells or spleen could be made out.—Dr. Martin, Dr. Angus, and Mr. Ouston thought that the tumours were tuberculous glands, and Dr. Beattie, Dr. Bolam, and Dr. G. G. Turner favoured the view of lymphadenoma.—Mr. Foggin read a paper on Minor Eye Injuries and Antisepsis. Attention was drawn to the fact that no less than 12 varieties of bacteria had been isolated in the normal conjunctival sac,

and to the many virulent organisms that caused inflammation with or without direct traumatism. The corneal epithelium should be treated as carefully as was the peritoneum. In treatment discs of atropine, cocaine, protargol, &c., were superior from an aseptic point of view to solutions kept ready made, whether used by surgeon or by patient, but gelatin discs were more liable to be septic than the compressed variety and were not so readily absorbed. Discs had the further advantage of exact dosage. Reference was made to fluorescine as a means of diagnosing actual corneal abrasions, also to the use and abuse of the eye-pad and bandage.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Oct. 25th, Dr. Wearne Clarke, the President, being in the chair.—Dr. C. N. Gwynne showed a Large Growth, probably Papillomatous, removed from a Labium Minus.—Mr. R. Favell showed: (1) A specimen of Double Pyosalpinx; and (2) a Complete Cast of the Mucous Membrane of the Bladder passed per urethram six weeks after labour.—Mr. J. Menzies showed a large Branched Renal Calculus (oxalate of lime) removed together with the Kidney from a woman, aged 57 years. Special features of the case were the absence of hæmaturia and of characteristic attacks of pain during the six years which intervened between the onset of symptoms and the operation.—Mr. V. K. Blackburn showed the following specimens: (1) Duodenal Ulcer; (2) New Growth of Lung Perforating into a Pulmonary Vein; (3) Gastro-enterostomy for Dilatation of the Stomach; and (4) Primary New Growth of the Liver.—Dr. Sinclair White read a paper on the Operative Treatment of Pyloric Obstruction and illustrated it by exhibiting a series of patients on whom he had operated. Attention was called to the simple and safe way of demonstrating a dilated stomach by pumping air into it through a soft œsophageal tube. The differential diagnosis of the obstructing agency was often difficult or impossible until the abdomen had been opened, and even then certain cases of inflammatory thickening around the pylorus were liable to be taken for malignant disease. All patients showing definite symptoms of pyloric obstruction should submit to early operation if in a fit state to be operated upon. It had been conclusively shown that a large proportion of pyloric cancers remained for a considerable time strictly local growths capable of removal by pylorectomy at a risk to life which was not prohibitive having regard to the issues involved. In the treatment of non-malignant cases the surgeon had a variety of devices at his command, but the choice was gradually being narrowed to pyloroplasty and gastro-jejunostomy. While both operations gave excellent results pyloroplasty was theoretically the better of the two, but it was not sufficiently so to justify its adoption if it was less safe to life than gastro-jejunostomy. The ease, and to a large degree the success, with which pyloroplasty could be performed was influenced most of all by the mobility of the pylorus. If the pylorus could readily be withdrawn through the abdominal wound and isolated by gauze packing the operation was an ideal one and should be practised to the exclusion of all other methods; but if, owing to adhesions, the pylorus should be fixed at the back of the abdomen pyloroplasty became a tedious, difficult, and dangerous operation and should give place to gastro-jejunostomy which could always be performed with the parts involved outside the abdominal wall.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The annual meeting of this society was held in the medical library of University College, Bristol, on Oct. 10th.—Dr. D. S. Davies gave the Presidential Address. After introductory remarks claiming the inter-relation of public health with medicine and surgery the address dwelt first on the problem of disease causation viewed from the several standpoints of the ancient and modern world—the ancient view, a superstitious dread of mysterious inexplicable disease; the modern view, a careful study of the life-history of causal parasitic organisms and of conditions causing or assisting their distribution—and epidemics as growth by geometrical increase along definite lines to be carefully traced back to initial cases, or, better still, to be checked first by making the conditions of life unfavourable to the parasitic habit, and secondly by dealing with individual first cases. The evolution of parasitic species was then discussed on the lines of Leuckart's and Payne's views, that these diseases originated from free living species, having adopted the parasitic habit under favourable environment and subject to the three parasitic laws of entrance, migration, and exit. Finally, the interacting causes, political, social, and medical, which were at work during the eighteenth century and led up to the modern conditions of life and labour, new social conditions under which the struggle with cholera had to be waged, unsuccessfully at first, but in time resulting—by continuance of the tendencies and altruistic endeavour of the previous century re-lighted by the pressing needs of the moment—in the beginnings of modern public health work, which meant far more than the mere care about communicable diseases, and had for its wider aims care of every class of the community, aims not yet fully realised but improving from day to day and full of promise for the future.—The honorary secretary (Mr. Paul Bush), the editorial secretary (Mr. James Taylor), and the honorary librarian (Mr. L. M. Griffiths) read their annual reports, the latter mentioning that there were at the present time nearly 20,000 volumes and 226 current periodicals in the Bristol Medical Library.—Dr. Barclay J. Baron was elected President-elect; Mr. Paul Bush was re-elected honorary secretary; Dr. J. Michell Clarke, Mr. J. Dacre, Dr. B. M. H. Rogers, Mr. G Munro Smith, Mr. James Taylor, and Dr. H. Waldo were elected to serve on the committee. Mr. Griffiths, Mr. Munro Smith, and Dr. Taylor were nominated to serve on the Library Committee.—Dr. Cyril H. Walker showed a patient with Sub-congenital Dislocation of the Lens, and Dr. A. Ogilvy made some remarks on this interesting case.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Nov. 1st. Dr. A. Wallace gave the presidential address on Medical Organisation and Reform. He pointed out how the medical student had impressed on him by his teachers the dignity and honour of his profession and how little he was told of the other side of the picture, quoting in illustration from a recent address by Sir Samuel Wilks to the students of Guy's Hospital. The consultant took little interest in the welfare of the general practitioner and knew little of the conditions under which general practice was carried on. Consequently, while the remedy for grievances lay in organisation, representatives chosen from the consulting class were likely to do little. Dr. Wallace thought that the number of organisations was overdone, and that the matter should be taken up by the British Medical Association, aided by small local societies. The dignity of the profession was all very well, but they could not live on dignity. With regard to the difficulties encountered in general practice there was, for example, the nurse with her thermometer and bag of dressings making irresponsible diagnoses and giving irresponsible advice. There was ambulance work helping to produce quack medical men. The unregistered man, said Dr. Wallace, had the best of it. Legislation, with few exceptions, was all in his favour. Coming to matters in which legislation was called for Dr. Wallace referred especially to death certification and the midwives question. These and other subjects could not be properly dealt with by the General Medical Council, itself composed of men who talked much of the dignity of the profession and little of its difficulties. More direct representation was wanted in the Council before it would recognise, for example, that the medical aid system, which might require a medical man to go three miles, pay a visit, and supply medicine for 3*d*., should be brought to an end. Credit was due to the Council for raising the standard of medical education, but it cared nothing for a man after he was qualified. The profession should organise, with small local societies as the units. Concluding, Dr. Wallace quoted from an eminent author: "Look not wistfully on the past, it cannot come back again. Wisely improve the present, it is thine. Go forth to meet the future without fear and with a manly heart."—Mr. J. Chadwick, Mr. R. B. Sellers, Mr. G. W. Malim, Mr. J. Rodley, and Dr. W. J. Kerr took part in the discussion which followed, and a cordial vote of thanks was then given to Dr. Wallace for his address.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held at 20, Hanover-square, on Oct. 24th, Dr. A. J. Harrison, the President, being in the chair.—Mr. G. Pernet showed, for Dr. Radcliffe Crocker, a case of Acquired Syphilis in an infant, aged 15 months.—In the discussion which followed some difference of opinion was expressed as to whether this was really acquired or hereditary syphilis.—Dr. P. Abraham showed: (1) A case of Leprosy which had been previously brought before the society in which manifest improvement

had followed treatment with chaulmoogra oil; (2) a case of Monilethrix, the hair of the scalp and eyebrows being affected; and (3) a case of Verruca of the Lips.—Dr. A. H. Stowers showed a case of Tertiary Syphilide of the Forehead and Face simulating Acne Rosacea.—Dr. A. Eddowes showed: (1) A case of Combined Psoriasis and Acquired Syphilis, eruptions characteristic of both diseases being present at the same time; and (2) a case of Acne Lupus.—Dr. Stowers deprecated the term "acne" being used to qualify this case which appeared to be lupus vulgaris with no relation to acne.—Mr. W. T. Freeman showed a case of Diabetic Eczema.—Mr. Pernet exhibited cultures and microscopical specimens illustrating (1) Ringworm, (2) Monilethrix Hairs, and (3) Sections of Skin from the case of Leprosy shown by Dr. Abraham in which the bacilli leprae were numerous.

SOUTHPORT MEDICAL SOCIETY.—The annual meeting of this society was held on Oct. 10th.—The first annual report and balance-sheet were adopted, being considered highly satisfactory.—The following officers were elected:—President: Dr. Robert Harris. President-elect: Dr. Charles Pinkerton. Vice-President: Dr. G. C. Walker. Treasurer: Dr. F. J. Baildon. Honorary secretary: Mr. R. M. Little. Committee: Dr. Anderson, Dr. P. Ashworth, Mr. A. H. Baines, Dr. W. H. Barrett, Dr. Russel, and Mr. A. J. Popert.—The President then delivered an inaugural address entitled Some Observations on the History of the Profession in England during the Century. He described the gradual changes which had taken place in the position and status of the profession, the various enactments of Parliament, and the changes in the licensing bodies and their powers during this period.—The annual dinner was held at the Queen's Hotel on Oct. 31st, under the presidency of Dr. Harris. 40 gentlemen were present, including several distinguished guests from neighbouring towns, and the proceedings throughout were of a highly successful character.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—The inaugural meeting of this society was held at the General Dispensary on Oct. 10th; there was a large attendance of members and visitors, the President, Mr. G. B. Wray, being in the chair.—Dr. F. W. Mott, pathologist to the London County Asylums and physician to Charing Cross Hospital, gave an interesting address on the Selective Action of Poisons in Relation to Nervous Diseases, illustrating his lecture by means of limelight pictures and diagrams of neuropathic conditions.—At the conclusion of a pleasant evening a hearty vote of thanks, proposed by Dr. W. B. Ransom and seconded by Dr. C. H. Cattle, was accorded to Dr. Mott.

Reviews and Notices of Books.

Lectures on Medical Jurisprudence and Toxicology. By FREDERICK J. SMITH, M.A., M.D. Oxon., F.R.C.P. Lond., F.R.C.S. Eng., Physician to, and Lecturer on Forensic Medicine at, the London Hospital, Medical Referee to the Home Office. London: J. & A. Churchill. 1900. Pp. 396. Price 7*s.* 6*d.*

IN the preface the author explains that this book represents in detail, though not absolutely *verbatim*, the lectures which he has delivered at the London Hospital for some years. Dr. F. J. Smith writes the preface in an apologetic strain, but after a careful perusal of his work we can assure him that there was no need for him to adopt such a tone. The subject-matter is certainly condensed and we perfectly agree with him that "cram-books" are not to be encouraged, but in the book now before us the student will find all that he requires to know for the ordinary pass examinations. Not only so, but the busy practitioner will find it most useful for reference if he is suddenly called upon to give evidence before a coroner's or a magistrate's court in a difficult or obscure case. Should the case prove a serious or complex one experts will probably be requested to give to the counsel for the Crown the skilled help that is necessary.

Dr. Smith writes in plain and concise terms and there is no danger of misunderstanding his meaning. He introduces a new element into text-books of this nature and that is the frequent use of comparative tables or summaries. These are admirably put together and will enable the student to condense his knowledge in a satisfactory manner. A good example of such tables is found in one of the chapters on "Signs of Death." Difficulty not infrequently arises after death from violence in distinguishing between a bruise and a hypostasis; and, moreover, this point is frequently to be found in examination papers. By a careful study of the short explanatory notes given in the form of a table the student will easily be able to answer such questions, and in addition if he should require to make any practical use of such knowledge on a future occasion a glance at the table will at once recall the essential differences between the two conditions above alluded to.

In a similar manner are detailed the points to be noticed in making a post-mortem examination on a body found in the water and the principles which govern the management of "wounds" from a medico-legal standpoint. The portion of the book dealing with toxicology is also worthy of praise. This is always a subject of considerable difficulty to the student. The "method of occurrence," symptoms, fatal dose, and post-mortem appearances are briefly (but at quite sufficient length) and succinctly recorded; Dr. Smith has wisely refrained from giving any but the most simple chemical tests. It is absurd for an ordinary medical practitioner to be expected to make a complete chemical examination in a case of suspected poisoning. Special aptitude and long years of experience are necessary before results can be obtained which would be of value in a court of law. This state of affairs is now generally recognised and expert chemists are delegated to make the required analyses.

We congratulate the author on the production of a useful text-book and can confidently recommend it to those for whom it is intended.

Practical Uranalysis and Urinary Diagnosis. By CHARLES W. PURDY, LL.D., M.D. Queen's University. Fifth revised and enlarged edition. Philadelphia, New York, and Chicago: The F. A. Davis Co. 1900. Pp. 392. Price $3.

THE fourth edition of this excellent manual was reviewed in these columns only about two years ago (Jan. 7th, 1899, p. 33), yet a demand for another issue has already arisen. This fact is the best evidence of its acceptation as a book of authority both on the clinical and practical sides of the subjects with which it deals. In the present edition some very important additions have been made. The work now contains an entirely new chapter on the microscope in its application to urinary analysis. In this we find careful details as to the management of the microscope and the preparation of the sediment for microscopical examination. Urinary casts are first described, epithelia and then the various forms of crystals met with in the urinary sediment, the study of the morphological features of pus and blood-cells in the urinary sediment being, of course, included. A short section upon bacterial examination concludes the chapter. Another feature of importance in the new edition is a description of the application of centrifugal analysis in urinary work. The author has devoted some years of labour to this interesting and rapid method of analysis and he regards centrifugal analysis as having now been elevated to the dignity of a scientific process which is justly entitled to rank amongst the so-called exact methods of analysis. New tables and improved methods have been introduced by means of which the determination of albumin, chlorine, phosphoric and sulphuric acids may be made "both relatively and absolutely with the degree of accuracy equal to that of any other method." In other respects the subject-matter of the

present volume remains the same as in the previous edition. Its value consists largely in the fact that it deals with both the accurate analysis of urine and the clinical significance of the results in a correct and intelligible sequence, an opinion which we expressed before and which leads us still to regard the work as one of the best guides to the analysis of urine and to the clinical indications of the analysis. We are glad to find that the author does not employ the inelegant American abbreviations so generally adopted in the United States with regard to chemical substances. He writes "chloride" not "chlorid," "urine" not "urin," "sulphide" not "sulfid," and so on.

Cleft Palate and Adenoids; Treatment of Simple Fractures by Operation, &c. By W. ARBUTHNOT LANE, M.S. Lond. Second edition. London: The Medical Publishing Company. Pp. 344. Price 6*s.* 6*d.*

THE first edition of this volume was in so much demand that a second issue has been prepared, and the author tells us that he has taken the opportunity of supplementing some of his original statements in which detail had been sacrificed to brevity, but the changes are not numerous. The volume consists of lectures which have appeared previously in the *Clinical Journal* and they deal with many subjects. The most interesting chapter is probably that which is concerned with the operative treatment of simple fractures and in it the author states very clearly his well-known views and supports them by accounts of several cases. Though unable to accept Mr. Lane's conclusions, we must acknowledge that in only too many cases the results obtained in the treatment of simple fractures are not all that could be wished. Yet it is by no means proved that an operation would be the best means of remedying this evil. Skiagrams furnish us with a ready means of ascertaining the position of the fragments, but good functional results may be obtained even though the broken ends of the bone are not replaced accurately. Other chapters that are likely to be useful and instructive are those on acquired deformities, on the principles that should guide the surgeon in the operative treatment of cancer, and on "some experiences in the surgical out-patient room of a children's hospital." The work should prove of distinct value to those who have recently qualified. Unfortunately the title-page bears no date, though the preface is dated. It is unfair to the purchaser to publish a book without a date. The printing is all that can be desired.

Southall's Organic Materia Medica. Sixth and Enlarged Edition by JOHN BARCLAY, B.Sc. Lond., F.C.S. London: J. & A. Churchill. 1900. Pp. 340. Price 7*s.* 6*d.*

THE sixth edition of this well-known work is the outcome of the publication of the new British Pharmacopœia in February, 1898. The previous edition was issued in 1896 and since that was the fifth it may fairly be concluded that the work is found acceptable. The system of classification adopted is that of grouping together the drugs of analogous form and physical character instead of dividing them according to botanical origin. The classification, however, under natural orders is given in a sort of preface to the work. The author recognises, in dealing with organic materia medica, (1) organised drugs of vegetable origin; (2) unorganised drugs of vegetable origin; and (3) drugs of animal origin. He acknowledges that he has drawn freely upon standard works, and in his preface wishes it to be clearly understood that the work in no sense pretends to be anything other than a compilation. The work of compilation, however, is judiciously done, and in the present instance the author may be congratulated upon having put together just that information which meets the requirements of the student who aims at attaining a sound knowledge of official drugs and their Galenical preparations. One very useful feature of the work from the student's point of view is the official description of the drugs contained in the British Pharmacopœia, recording the characters and tests.

Occasionally we notice that the chemistry of certain drugs is somewhat meagrely described. To quote one example, Mr. Barclay does not mention that one ever-present and probably very important constituent of the thyroid gland is iodine, while mention might be made also of the fact that arsenic, of course in very infinitesimal quantities, has been found as a normal constituent of animal glands. The work will undoubtedly give assistance to those for whom it was compiled—namely, pharmaceutical and medical students, druggists, and others.

Operative Surgery. By JOSEPH D. BRYANT, M.D., Professor of the Principles and Practice of Surgery, Operative and Clinical Surgery, University and Bellevue Hospital Medical College; Visiting Surgeon to Bellevue and St. Vincent Hospitals, New York, &c. Vol. I., with 749 Illustrations, 50 of which are coloured. Third edition. Enlarged, thoroughly revised, and rewritten. London: Henry Kimpton. 1900. 8vo. Pp. 587. Price 21*s.* net.

THE second edition of this work of a well-known New York surgeon was published in 1887, and therefore it is natural that many and great changes have been found necessary before this edition could be issued—in fact, Professor Bryant has found it necessary practically to re-write the whole work, with the result that it is now fully representative of present-day practice. As in the earlier editions, gynæcological operations and those connected with the eye and ear are intentionally omitted, as they are best dealt with in the pages of special treatises.

The work commences with an account of the general arrangements which are requisite for operations; then follows a good description of the chief anæsthetics employed, both general and local. The section dealing with ether is, however, insufficient, and the best method of using ether—viz., in succession to nitrous oxide—is omitted altogether. We think that it would have been well to describe more in detail the treatment of anæsthetic poisoning. The author mentions that hypodermic injections of strychnine, digitalis, caffeine, and camphor may be given, but the reader is not told what dose of each of these substances should be administered; and the statement on the same page that "electricity is a valuable remedy" would have been much more useful if directions had been furnished for the application of the electricity, as in unskilled hands this powerful agent might easily be not merely useless but directly harmful. Professor Bryant regards rectal etherisation as having "a limited field of expediency" and finds it difficult "to assign to it a definite place among anæsthetics." His description certainly lends itself to this view. More modern methods are less open to these objections, especially if an adequate "interceptor" of condensing ether is used. It is probably the liquid ether entering the bowels which causes the danger to the patient.

The next section deals with the instruments and other apparatus necessary for an operation, and in this connexion we may mention that the author has been at great pains to prevent the names of instrument-makers appearing in these illustrations. This is a decided improvement.

In the excellent account of the treatment of operation wounds the only continuous suture described is that which is sometimes called the "glover's suture"; the button-hole suture is far preferable, for its traction is always exerted at right angles to the wound. In the next chapter, on the ligature of arteries, we find the first example of a method which is continued throughout the book which the author employs to demonstrate the instruments required in any operation. All those required have been placed on a table and then they have been photographed and the photograph has been reproduced. No more graphic method could have been devised than this for indicating the instruments needed in

any special case. The mention of these illustrations reminds us to note the profusion of illustrations and diagrams which this first volume contains; there are only 587 pages, including the index, and yet 749 illustrations are provided. This abundance of graphic teaching will greatly enhance the value of the work to the student.

It would serve no useful purpose to follow the author through all the chapters of this volume, but suffice it to say that every operation described shows signs of the care with which the author has treated the subject; the anatomy of the part involved is carefully described, the details of the operation are recorded, and the results achieved, the difficulties, and the dangers which may be encountered are mentioned. It would naturally be easy in a work traversing so large a subject to find not a few instances in which we differ from the author, but it must be acknowledged that they are not really numerous and on the whole are quite unimportant. We are much pleased with the manner in which the work reflects the best modern surgical practice. The student or surgeon may unhesitatingly regard this book as a trustworthy guide, and we cordially commend it to their notice. An elaborate index is provided and the printing of the volume is excellent.

LIBRARY TABLE.

Up-to-date Domestic and Industrial Applications of Electricity popularly explained. By ALPHA. London: S. Rentell and Co. 1900. Pp. 90.—"Alpha" makes an imaginary tour through the mazes of an electrical museum "which was crammed with all sorts of useful and interesting electrical inventions." The style of the work is that of a book on popular magic. When he reaches, for example, the entrance-door of the museum he is at once confronted with two announcements—"at home" and "not at home." Of course, by pressing a button a pointer moves to the former announcement indicating that the host is within. No sooner is this intelligence conveyed than the door flies open, again by electricity. On the door were a key alarm directed against the wiles of "Bill Sikes, Esq.," an alarm letter-box, and so on. In the hall the visitor found an electric hat-polisher and was about to try it when bells innumerable sounded which would have convicted him had he been a thief. Then there were a cigar-lighter in the hall, an alarm matting, and a boot-polisher, and the air was filled with ozone. All these things, of course, owed their existence to the wondrous electricity. Inside the house he found electrically produced chloroform, poison bottles sealed by electricity, for the glass stoppers were unremoveable unless released by the shutting off of the current. There were no staircases, for electric lifts conveyed the visitor with lightning-like speed to the various floors. And then—well, the wondrous sights encountered in "Alpha's" wanderings cannot be usefully enumerated further; they can easily be imagined. The book, of course, is in a way instructive, although exaggeration and fancy are questionable methods to adopt in order to convey the actuality of things to the unlearned.

Food and Drugs. By CHARLES JAMES HIGGINSON of the Inner Temple, Barrister-at-Law. London: Effingham Wilson. 1900. Pp. 179. Price 2*s.* 6*d.*—This is an excellent legal guide for public analysts, traders, and others. It represents an endeavour to consolidate the four Acts in operation in connexion with the sale of food and drugs. These Acts are (1) the Sale of Food and Drugs Act, 1875; (2) the Sale of Food and Drugs Act Amendment Act, 1879; (3) the Margarine Act, 1887; and (4) the Sale of Food and Drugs Act, 1899. Just such a consolidation was wanted and it will be found to be most usefully arranged and discussed in this little book. The relation of the various Acts may now be more easily recognised and thus the effect of amendments or amplifications can be more conveniently estimated. Mr. Higginson's comments on the legal aspects of the clauses are of value, as are also the cases which he cites as to peculiar defences and "findings." We will quote one example. "To manufacture, sell, &c., margarine containing more than 10 per cent. of butter fat constitutes an offence against the Margarine Act, 1887. Having regard to the relation which Section 12 of the latter Act bears to Section 25 of the Act of 1875 it might be argued that a defendant could shelter himself under Section 25 of the Act of 1875 by producing a written warranty to the effect that the margarine is guaranteed to contain less than 10 per cent. of butter fat. The point, however, is by no means free from doubt." The author similarly quotes cases in which some very knotty questions were involved. Notes on decisions—as, for example, the following, "*Held*, that there was sufficient compliance with the requirements of the section"—are further valuable sign-posts, so to speak, in the book. This little work should do much to clear up many troublesome points which so frequently arise in an endeavour to give a correct rendering of the Food and Drugs Acts.

The Autobiography of a Quack and the Case of George Dedlow. By S. WEIR MITCHELL, M.D. London: T. Fisher Unwin. 1900. Pp. 149.—There is a story current that at a ladies' college situated in the medical quarter of London the teacher of English literature one day asked the pupils what was the old English word for a doctor, to which a fair lady replied, "I know please, quack." Though the damsel's knowledge was inaccurate yet there can be no doubt that quacks form an interesting object of study and Dr. Weir Mitchell has dissected his specimen with great care. The name of the gentleman was Sandcraft and he had as a Christian name Ezra, of which he was of the same opinion as was Dr. Johnson with regard to Presbyterianism. "I was called Ezra, which is not a name for a gentleman." Mr. Sandcraft would have been a delightful person to meet. We occasionally come across quacks, not necessarily medical, somewhat like him now. His views on conduct were simple. "A fellow has got himself to think about and that is quite enough. I was told pretty often that I was the most selfish boy alive. But then I am an unusual person and there are several names for things." "..... A man must have an audience or make-believe to have one even if it is only himself." Mr. Sandcraft having started in "practice" supported himself at first by robbing his aunt. His "practice" led him into unsavoury by-ways, and having been indiscreet enough to be mixed up in the case of one "Lou Wilson—the woman that died last year," he was blackmailed by a gentleman who knew the circumstances into posing as a coroner and giving a certificate for the death of a man who had been poisoned. Later he took up spiritualism, but having deceived an aged and trusting client was severely beaten by the client's son. Mr. Sandcraft's remarks concerning men like himself are so apposite that we quote them in full: "Whenever a person has been fool enough to resort to folks like myself he is always glad to be able to defend his conduct by bringing forward every possible proof of skill of the men he has consulted." We take leave of Mr. Sandcraft dying in a hospital from Addison's disease and are really sorry to part with him. The Case of George Dedlow is a story of quite a different character and in some of its details reminds us of the immortal adventures of Captain Castagnette, but for a scientific piece of fooling it is excellent. We advise our readers to get Dr. Weir Mitchell's book and to read it.

Mental Nursing. By WILLIAM HARDING, M.D. Edin., M.R.C.P. Lond., Medical Superintendent, Berrywood Asylum, Northampton. London: The Scientific Press, Limited. 1899. Small 8vo. Pp. 91. Price 1*s.*—Dr. Harding has already published a work under the title of "Mental Nursing, or Lectures for Asylum Attendants." The present little book is based upon "those lectures taken (from the above work)

which refer more particularly to the care of the insane" and is issued in a cheap and compact form. The key-note is struck in the first chapter: "the nurse for mental cases must clearly understand that the patients with whom she has to deal are suffering from bodily disease. ..... Mental derangement is as surely an indication of (brain) disease as are cough and expectoration in the case of lung affections." The post of nurse in charge of a mental case requires much tact and forbearance as well as nursing ability. Dr. Harding lays down the wise rule that for a private case of acute mania or restless melancholia with suicidal tendencies at least three nurses are required, though if the patient be very feeble two may be enough. Practical and judicious advice is given as regards the patient's rooms, clothing, and food, and with respect to feeding by the stomach tube. Symptoms of hernia, peritonitis, and distended bladder may be present without being as manifest as they would be in sane patients and should be regularly looked for. Unless compelled by necessity a nurse should never attempt to deal singly with an excited or violent lunatic but should always call for assistance. Instructions are given as to restraint, seclusion, the wet pack, the searching of suicidal patients at bedtime, and the bathing of patients. A short account of the forms of insanity brings to a conclusion a well-written, clear, and useful little work suitable for nurses and attendants.

JOURNALS.

Edinburgh Review.—The October number contains a long article on "The Sick and Wounded in South Africa," based upon the debate which took place in the House of Commons on June 29th last on the management of hospitals in that country. The writer of the article concludes his critical and analytical history of the campaign in its medical aspects by claiming for his description that the truth, together with the lessons which it inculcates, has been set forth without fear or favour. He adds the expression of a hope that it may be for the last time that the officers of the Royal Army Medical Corps have to endure the most arduous labours and to battle with all the difficulties of an imperfect organisation. It is a thoughtful and well-balanced article, and if not altogether free from that "I told you so" spirit of wisdom which comes after events it is nevertheless written with an ability and a sense of responsibility which fully entitle it to serious and sympathetic consideration. And this is more especially the case because it does not deal with the subject in a merely destructive style of criticism, but in a constructive spirit also. It suggests for our imitation the system under which the Germans maintain the civil profession in touch with the army, and indicates some of the lines on which the Army Medical Service and the Royal Army Medical Corps might be remodelled with advantage. It would be impossible within any reasonable compass to take up all the points brought forward in the article in question. Nor is this necessary, for we make no doubt that those interested in the subject—and, considering its grave national importance and how it appeals to our common feeling of humanity, who is not?—will read it for themselves. Briefly summarised, the writer first takes up the question of unpreparedness. He refers to the evidence of the Director-General of Ordnance and others as to the total inadequacy of the medical reserve of stores and equipment in our possession immediately before the war to meet all the requirements of an army in the field; and mentions also the serious decline in popularity of the Army Medical Service. The service, he points out, is 60 below the figure which a late Director-General had already pronounced to be "perilously low" in numbers, while it has practically no reserve of medical officers for purposes of active service, so that the calling in of civil aid has been resorted to to an extent hitherto unparalleled. The writer next proceeds to give an outline of the situation in South Africa as far as it affected the hospital service. He refers to the eulogistic terms in which those who had been first of all sent out to the war had spoken and reported (and absolutely truthfully, we may parenthetically remark) of the hospital arrangements which they saw there. Then came the deplorable occurrences attributable to the epidemic outbreak of enteric fever, culminating in the appearance of Mr. Burdett-Coutts's letter in the *Times* of June 27th. The remainder of the article is taken up with the lessons inculcated by these occurrences and the remedial measures indicated. Here, while we agree with much of what is said, we consider the importance of the article detracted from because no stress is laid upon the fact that it was not until long after the campaign had begun that any correct notion had been formed on the part of the Government, the military authorities, or the nation itself, as to the probable nature, extent, and difficulty of the task that was being undertaken. It was consequently not upon one but upon all branches of the service that the results of our unpreparedness fell.

Bulletin of the Harvard Medical Alumni Association. Boston: Published by the Association. 1900. Pp. 67.—The objects of the Harvard Medical Alumni Association are "to advance the cause of medical education, to promote the interests and increase the usefulness of the Harvard Medical School, and to promote acquaintance and good fellowship among the members of the association." The tenth annual meeting was held in Boston at the Harvard Medical School on June 26th. The company at the annual dinner numbered 156. The president, Dr. David W. Cheever, in his address said that since the last meeting 119 new members had joined the society and that it now consisted of 1232 members. Dr. William T. Councilman delivered an address on the utility of laboratory work in the medical curriculum and on improved methods of teaching, especially of teaching pathology. Dr. James R. Chadwick gave a description and exhibited plans of the new building of the Boston Medical Library, now in process of construction, which is to be ready for occupancy on Dec. 1st next. The principal reading-room is 72 ft. long by 32 ft. wide; it is named Holmes Hall and contains a portrait and a bust of Dr. O. W. Holmes.

New Inventions.

AN INFANT'S REQUISITE.

THE trouble and discomfort entailed on mother or nurse by the constant change of towelettes necessary for the proper care of an infant up to four months old can, I think, be avoided by the use of the appliance depicted in the accompanying illustration. Attached to a soft band round the waist and applied closely, so as to cover genitals and anus, the receptacle will contain both urine and fæces, and keep the infant from contact with either, no matter in what position the infant or appliance is placed. The contents cannot escape or flow upwards and there is no necessity to remove the child from the cot when the receptacle is full. The cap at the base can be unscrewed, which will allow the contents to escape. The appliance should be removed daily for cleansing, hot water with Condy's fluid being poured through. The saving of time and trouble and of the expense of the washing of dozens of diapers weekly should recommend the "Infant's Requisite." The makers are Messrs. Arnold and Sons, London.

ALEXANDER DUKE, F.R.C.P. Irel., &c.,
Cheltenham. Ex-Assistant Master, Rotunda Hospital, Dublin.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 10, 1900.

THE questions at issue between the medical staff of the National Hospital for the Paralysed and Epileptic and the board responsible for the management of the hospital are again before the public and must assuredly receive an early solution if irreparable damage is not to be done to the institution. And that this should occur would be a veritable calamity, for the National Hospital for the Paralysed and Epileptic is known throughout the scientific world for its enlightened treatment of those whose afflictions it has been designed to meet. If the work of this hospital be impaired the national prestige of this country in the world of medicine will suffer.

Our readers may remember that the reply of the board of management to the circular letter issued by the medical staff to the general body of governors, wherein it was stated that the internal arrangements of the hospital were very unsatisfactory, was to call a general meeting of the governors of, and subscribers to, the hospital in the middle of the August holidays. 16 persons attended this meeting, and there is reason to suppose that this small group was almost entirely composed of friends of the board of management, who received special invitations to attend. The medical staff was not represented at the meeting, and the proceedings, which were reported *verbatim* in our columns, need no further comments from us than those which we have already made.[1] No one who honestly desires to see harmony restored between the medical staff of the hospital and the board of management—a conjunction by which alone the effective working of the hospital will be secured—can fail to see that the meeting settled nothing. The staff, when notice of the meeting was given, intimated the intention not to recognise the authority of a meeting so convened, and the board of management must since have found that the position then taken up by the staff meets with solid approval from all those best qualified to judge in the matter. But the board does not yet appear to understand the situation. A letter addressed by Mr. B. BURFORD RAWLINGS, secretary-director of the hospital, to the editor of the *Times* on Oct. 18th states that the board now proposes that an inquiry into the management of the hospital by "an independent legal authority" should be undertaken at the earliest moment. This is excellent well, as far as it goes, but such an inquiry does not in the least bit meet the case. The charges made by the staff concerning the domestic condition of the hospital form only a part of the report which the staff has made to the governors, and the members of the staff have now intimated their intention not to consent to the investigation of one portion of the charges while the greater part are ignored. They refuse, and rightly, to recognise that the decisions of the meeting of August 11th, under which the inquiry by "an independent legal authority" is to be made, have any weight with them, while the gist of their demands remains unnoticed. The members of the medical staff demand representation upon the board of management, and if this representation is not conceded to them they will inevitably retire from their position as medical officers of the hospital, positions which they are proud to hold and which, we may add, they singularly adorn.

That the determination of the members of the staff to be represented on the board of management of the hospital is not due to exaggeration of their own importance ought to be recognised by this time with the same clearness by the governors of the hospital and by the board of management as it is recognised by the medical world and all who are capable of forming a just opinion upon the situation. A letter appeared in the *Times* of Nov. 2nd, signed by the senior surgeons and senior physicians of all the hospitals in London having over 100 beds, by several past presidents of the Royal medical corporations, by the medical men holding Court appointments, and by a few other leaders of medical thought, setting forth the opinion that the demand of the medical staff to be represented on the board of management of the hospital for which they give their scientific services is proper, and expressing a hope that the board and the governors will put an end to the controversy by granting the representation asked for. The letter, which we reproduce this week in our columns, could have received the signature of every medical man of weight in the kingdom, but it was only desired that it should be signed by men able from their position to give their names as representatives of great public medical institutions or as occupants of some definite place in the public eye. We trust that those who form the board of management will recognise the soundness of the advice that is offered them. The time is come in the interests of the charity which they are presumed to administer for the public good when they should recognise the real state of affairs. The contention is not about the cleanliness of a sheet on a certain bed or the lunacy of a patient on a certain date. The effectiveness of a charitable institution of world-wide renown and enormous public value is at stake. The work of the National Hospital for the Paralysed and Epileptic can only be carried on properly if harmony is established between the medical staff and the board of management. Such harmony will never exist until the board of management admits to its counsels representatives of the medical staff, so that the views of the lay and medical authorities can be properly exchanged without intermediary or risk of distortion upon any points whatsoever. Never.

WHEN students are attending a course of lectures on forensic medicine the lecturer attempts to impress upon them the importance of always making a complete post-mortem examination in any case submitted to them by the coroner; all the cavities of the body should be opened even though sufficient cause for death is found in the cavity just opened. Too often, however, this advice is forgotten; certain parts of the body are not examined, and when the medical witness submits himself to the questioning of the coroner or of counsel

[1] THE LANCET, August 18th (p. 492 and p. 551, et seq.), and 25th, 1900 (p. 580).

he is forced to admit his omissions and occasionally to experience the discomfiture of being requested to make a second and more complete investigation. In a few instances this omission on the part of the medical man has almost led to the breakdown of the case. The well-known Penge case is an instance, and another in which the consequences involved were not so serious was that in which a medical man gave evidence that death was due to "congestion of the lungs," whereas further examination showed that the child had died owing to the impaction of a foreign body in the larynx. A notorious case of this nature will probably be remembered by our readers. A medical witness stated that he had fully examined the organs of a body upon which an inquest was held. It was discovered, however, before the inquiry was concluded that no real examination had been made, that the skull-cap had not been removed, and that neither the chest nor the abdomen had been opened. The inquiry was adjourned and a proper examination was made by other medical men who subsequently gave evidence. The first practitioner was recalled, his original depositions were read over to him and he was asked if he had any reason to alter such evidence as he had given and if he really had made a complete examination. He reaffirmed the truth of his evidence and again swore that the examination as detailed by him had been made. He was committed by the coroner for perjury, but on the case being tried the magistrate, in giving his decision, took the extraordinary line that the matter was one of mere difference of opinion between medical men and actually dismissed the case. The Council of the Medical Defence Union then very properly brought the matter before the General Medical Council, with the result that the medical practitioner was judged to have been guilty of infamous conduct in a professional respect and the Registrar was directed to erase his name from the Medical Register.

In a case recently heard at Walsall a similar complication arose. Two men were charged with feloniously killing another man. The medical man who made the necropsy stated that on examination he found certain marks of injury about the head and upper part of the body. The membranes of the brain were intensely congested, as were also the other organs of the body. The heart showed signs of valvular disease. He considered death to have been caused by "failure of the heart's action due to shock." The shock he ascribed to the rough treatment the man had undergone, but he added that although the deceased was the subject of valvular disease of the heart, yet with ordinary care he might have lived for years, and that a blow which to a man in ordinary health would only cause temporary pain would in this case cause death. In reply to further questioning he admitted that he had not dissected down to the vertebral column, but nevertheless he said that there was no dislocation of the vertebræ. The medical witness was skilfully questioned by Dr. J. J. LYNCH, one of the magistrates. The witness stated that when death ensued the injured man was "black in the face," and he made the rather extraordinary statement that "the fact that the man went black in the face was consistent with death from shock," and further explained that "if death resulted from syncope then the first symptom was pallor, but as the heart's action got weaker a dusky colour ensued." In face of the evidence as thus presented the case was adjourned and a further examination was ordered. The medical witness who gave evidence on the former occasion then very candidly admitted that he desired to modify the opinion which he had already expressed. With the assistance of a colleague he had made a more exhaustive examination of the body of the deceased and had found a dislocation of the first and second cervical vertebræ with fracture of the odontoid process and rupture of the lateral ligaments. There was also an extravasation of blood around the upper part of the spinal cord. Death, in his opinion, was due to two causes, either of which would prove fatal—namely, the compression of the blood on the spinal cord, and, secondly, the pressure of the odontoid process on the cord. These injuries might have been caused by blows of such character as had been described. He likewise suggested that in a death of such a nature there would be no pallor of the face but suffusion of the vessels. With regard to the heart he admitted that he was wrong when he spoke of valvular disease; the real pathological condition consisted of syphilitic deposits in the mitral and tricuspid valves.

This case illustrates extremely well the axiom to which we have already referred—that in all medico-legal cases a post-mortem examination must be complete in every particular. Had the case rested on the result of the first necropsy an awkward difficulty would have been introduced. Legally, if a man wilfully inflicts an injury upon another who happens to be the subject of some disease and thereby causes his death, although the same injury would not have proved fatal to a healthy individual he is responsible for the result of the injuries. To take a rather extreme case, a man who has an aortic aneurysm is wilfully knocked down by another man, and as a result the aneurysm bursts and the man dies. His assailant could be tried on the capital charge, although the court would probably take a very different action than it would if the deceased had been perfectly healthy. In the above case the accused persons would have been much in the same position. Although they would deserve punishment for the assault, yet it would seem a severe measure to hold them entirely responsible for the fatal result. The second examination proved, however, that severe injuries had been sustained as the direct result of the blows, and consequently the prisoners would have to answer the more serious charge. On the general aspects of the case, after due consultation, the bench committed the men for trial on a charge of manslaughter.

IN June of this year, when the stress of the secretarial work connected with the reconstitution of the University of London was over, Mr. BAILEY SAUNDERS, the secretary of the Commission to which the reconstruction was confided, bethought himself, and very wisely, too, of the athletic needs of the University. With the approval of the Commissioners he invited the athletic clubs in the various Schools enrolled in the new University to meet at the office of the Commission and consider the question of organising London University athletic clubs. The idea was a thoroughly good one, and one which we hope may have a practical outcome.

At the present moment London University is a medley, even if the strenuous efforts of the Commissioners have saved it from being a muddle. Schools of all sorts, which have never been brought into contact in any way with each other, and which represent not only completely different branches of knowledge but completely different social grades, have been lumped together to form one entity. The work of the Commissioners was arduous and has been well done, and it is no fault of theirs that the elements which they were required to blend are from the nature of things not easily blended. But everything that makes for solidarity amongst the students should be welcomed by those who have the practical success of the new teaching centre at heart. In our opinion two things only can weld this heterogeneous body together and make of them a true university. Time, of course, is one, and one which no efforts can influence. The other is the pursuit of athletic sports and this can, though with difficulty perhaps, be promoted in London under conditions that will make the various clubs representative of the University. In the different branches of athletics we have a bond which will appeal to all the students of all the Schools whatever their standing or faculty; and Mr. BAILEY SAUNDERS is to be congratulated upon having added a workmanlike finish to his labours as secretary by taking the first practical step in the direction of organising athletic clubs for the University. In response to his invitation a number of delegates from various Schools of the University attended the meeting held in June last, while mainly owing to his efforts a still larger number was present at the second meeting held on Oct. 19th in the board-room at St. George's Hospital. At this second meeting Mr. C. T. DENT and Dr. ISAMBARD OWEN of St. George's Hospital, Dr. J. KINGSTON FOWLER and Dr. W. PASTEUR of the Middlesex Hospital, Mr. A. H. TUBBY of Westminster Hospital, and Mr. HERBERT JACKSON of King's College were present, and the chief question discussed was whether membership of the proposed athletic clubs should be confined to London University students or whether it should be open to all students at all Schools of the University. For our part, in spite of the difficulties of organisation therein implied, we hope that the qualification will be as wide as possible. If athletics are to be used as the bond between the Schools of the University all members of those Schools must be eligible to represent the University. The difficulties ahead are great. The question alone of a central ground is one which may well give pause; while differences of opinion as to procedure will spring up in every direction and small jealousies will have to be wiped out all round the compass. But when athletic clubs truly representing the combined athletic capabilities of all the Schools are formed, the first active step towards making a congeries of items into a university will have been taken.

We are certain that the medical schools will be found in the van of this movement if it should take practical shape. They constitute at the present moment the teaching side of the most important faculty of the newly constituted University, and their right place will be in the van. But a university is not an institution of one faculty. That is, in fact, exactly what it is not. And it is not good for a university to have a too predominant faculty, even though that faculty be medicine. We trust, therefore, that the first aim of the promoters of athletic clubs for London University will be the securing of the active coöperation on equal terms of the students of all the faculties. In this way, and in this way only, can athletic sports be used to forestall time and to weld together the somewhat incongruous elements forming the teaching centre of our metropolis; and it may be added that nothing can be better for the university education of the medical student, in the true sense of the words "university education," than that he should occasionally consort in his playtime with his equals in age who are not following the same studies as himself.

Annotations.

"Ne quid nimis."

ALCOHOL AND THE TROOPS RETURNED FROM THE WAR.

WE have upon previous occasions[1] expressed our hopes that the home-coming of our brave soldiers would not be made the opportunity for harming their health and prospects by treating them to an overplus of alcoholic drinks. As most becomes us we dealt with the subject from the medical point of view, and the matter is so important that we shall recapitulate our arguments. Many of the troops who return will be suffering from the effects of wounds, more from the effects of illness, and not a few from both. It is no kindness to give any man, even one in health, a mixture of drinks of not the best quality which will cause him to have a head like a hive of bees. Still less is it kind thus to treat a man who has been doing his best for his country, who has suffered, if neither wounds nor illness, at all events privations and hardships of no common order. Drunkenness is neither good for health nor for prospects of civil employment. So far for our own special interest in the matter. With regard to the other points of the question we need only refer to Lord Roberts's admirable letter which appears in another column. If there was never a commander more loved and honoured by his men than "our Bobs" there has rarely if ever been an army better behaved, more highly appreciated, and rightly so, by its commander than the present army in Africa. "They bore themselves like heroes on the battle-field and like gentlemen on all other occasions." We are sure that the appeal of the man who wrote these touching and true words will not go unregarded by the fellow countrymen of those of whom the words were written. Let us welcome those who return with every honour and joy, but let us not forget that they have been face to face with death. And let us, too, remember that many there are who will not come back, that in the crowds who will come to welcome those who do there will be many with aching hearts, and that such an occasion is one of solemnity and not of licence.

SIR MICHAEL FOSTER ON EXPERIMENT IN MEDICINE.

THE occasion of the annual prize-giving at St. George's Hospital on Nov. 6th furnished an opportunity to Sir Michael Foster to deliver an excellent criticism of the present-day attitude of some people towards hospitals and hospital teaching. Sir Michael Foster's view was that the

[1] THE LANCET, July 28th (p. 273) and Oct. 6th, 1900 (p. 1028).

opportunities for advancing knowledge offered by the hospitals, while they were misunderstood by the public, were not adequately laid hold of by the students. A section of the public said that hospitals ought not in any way to serve as theatres of investigation. There had been much misdirected talk about hospitals being used for the purposes of experiment, but every touch of the surgeon, every counsel of the physician was an experiment, because it was not possible to be absolutely sure of the result, though the surgeon and physician were prepared to profit to the utmost by the teachings of that result. The factor of uncertainty might in certain cases be insignificant, but it could never be wholly absent, and it therefore might be said that there were performed day after day, in every hospital, a multitude of scientific experiments. Every such experiment was directed to the welfare of the patients and the teaching derived therefrom tended to diminish that great factor of uncertainty and to make the science of medicine less and less experimental and more and more efficacious. Sir Michael Foster regretted that the analysis of the phenomena of disease at the bedside, no less than in the post-mortem room, was apt not to be carried out in hospitals as completely as it should be. Such analyses could, he pointed out, only be carried on by means of thoroughly equipped laboratories in connexion with the hospitals, and the cost of these was as proper a charge on the funds of a hospital as the bill for drugs or surgical appliances. Much was heard nowadays about post-graduate study, and he suggested that it would most properly take the form of training men in the true methods of research so as to satisfy not only the demands of any examination but the demands of nature itself. The American graduates complained that they received very little post-graduate aid at the London hospitals and that the special institutions failed to supply them with what they wanted. They had, in fact, to go away from London, often against their wish, because it was impossible to secure in the metropolis what they could get elsewhere. If post-graduate study was so organised that the men were properly trained in investigations and inquiries, that would meet the wants of all and the graduates from the other side of the water would not fail to find in London what was required. These graduates could be directed and trained in a number of important problems and thus be educated in the right way of looking at medical truths and the final result would be an immense addition to our medical knowledge.

MASTERS, SERVANTS, AND MEDICAL MEN.

A NEWSPAPER report, erroneously as far as we know, has recently assigned to Mr. Fordham, one of the Metropolitan police magistrates, a dictum to the effect that employers are responsible for medical attendance upon their domestic servants. This, of course, is not the case, the employer only being liable who has called in the medical man or otherwise directly or indirectly undertaken to remunerate him. In 1795, it is true, Lord Kenyon was of another opinion, and held that a master was obliged to provide for his servant in sickness and in health and that he was therefore liable for medicines furnished to his servant while in his service. Eleven years before, however, Lord Mansfield had said in a case of this kind: "I don't applaud the humanity of the master. ..... I think, in general, a master ought to maintain his servants and take care of them in sickness, but the question now is, What is the law?" and the rest of the court had agreed with the Chief Justice in holding the master not to be liable. In 1802 one of the judges, hearing an appeal in which the above-mentioned judgment of Lord Kenyon was cited but not followed, expressed his belief that the humanity of his lordship had misled him, and that it must have occurred to him that if the master was not bound to provide medical assistance for his servant the latter would be left wholly destitute, while another judge who was a member of the same tribunal summed up the situation by saying, "It must be left to the humanity of every master to decide whether he will assist his servant according to his capacity or not." The view of the law laid down in this case[1] has, we believe, not been disputed, and we must accept it, qualified as it is by the opinions expressed as to the moral obligation upon the employer to see that proper medical aid is afforded to the servant, even if his doing so involves a demand upon his own pocket. We are aware that a servant earns higher wages nowadays and is upon a different footing with regard to his employer than when, as we find from the report of the case above mentioned as decided by Lord Kenyon, he was "part of his family," but the servant of either sex is not always even now able to defray the cost of proper treatment in illness, and is often unwilling to procure the best, or indeed any, medical advice, in cases where medical advice is a necessity and the intrusion of the quack or unqualified adviser may be fraught with serious consequences. Medical men, however, must not treat the domestic or other servant under any mistaken impression that the employer, as such, is legally bound to pay for the medical attendance or the medicine.

MEAT INSPECTION AND THE USE OF STERILISED MILK.

MUCH interesting information on the subject of meat inspection as conducted in four great centres of population will be found in a report recently presented by Dr. Henry O'Neill to the Markets Committee of the county borough of Belfast. This gentleman was appointed by the corporation of Belfast as a delegate to represent them at the Congress of Hygiene and Demography held in Paris last August, and he therefore devotes several pages to meat inspection as carried out in Paris, where there are no private slaughter-houses and where all animals intended for food must be slaughtered at the public abattoirs at La Villette, Grenelle, Vaugirard, or Villejuif. The abattoir at La Villette covers 67 acres, and in it 3000 oxen and cows, 1000 calves, and 10,000 sheep are slaughtered weekly, employment being thereby provided for about 1000 persons. The meat is examined by qualified inspectors under the superintendence of a veterinary surgeon, and if found to be healthy and good it is stamped with the letters "P.P.," meaning Prefecture of Police. Meat obtained from animals killed outside Paris, no matter how near the city, can only be brought into Paris through the appointed city toll-gates and must be taken for inspection to the public slaughter-houses or to certain specified markets, where it is stamped if found satisfactory. Meat improperly admitted for human consumption is seized and either destroyed at the owners' expense, or if claimed for use in manufacturing processes it is subjected to appropriate treatment before being returned to them. In Berlin the method is somewhat the same. All cattle to be offered for sale in the city must be brought to the public abattoir, and the slaughtering of cattle anywhere else within the municipal boundary is absolutely forbidden. All dead meat slaughtered in the country or abroad and intended for human food in the city must be brought to the public abattoir and meat market for inspection. No butcher in Berlin may offer meat for human food which does not bear the official stamp. In London, on the other hand, there is no regular inspection of meat except in the market at Smithfield and all meat is held to be fit for food unless it has been condemned by the officers of the sanitary authorities. There is, in fact, no doubt that London

[1] Wennall v. Adney, 3 Bosanquet and Puller's Reports, 247.

receives diseased meat sent up from all parts of the country. In Manchester meat inspection in the abattoir and meat-market is conducted much in the same manner as in the City of London: there is no complete inspection of all meat and the meat which is inspected is not stamped. Dr. O'Neill embodies in his report a number of useful suggestions for an improved method of inspection. In a separate report presented to the Public Health Committee of the county borough of Belfast he mentions the method of milk-inspection followed in Manchester and discusses the question of the municipal supply of sterilised milk as practised at St. Helens in Lancashire for rather more than a year past. These reports will be found useful by anyone in search of information on the subjects of which they treat.

THE LATE PRINCE CHRISTIAN VICTOR.

THE death of Prince Christian Victor from that most insidious of diseases, enteric fever, at the age of 33 years, was announced in a telegram from Lord Roberts at a time when London was rejoicing at the return of the City Imperial Volunteers, but, in accordance with the wish of the Queen and of other members of the Royal family, the public announcement of the sad fact was delayed in order that a gloom might not be cast over those rejoicings. Although the Prince was known to be seriously ill the announcement of his decease came as a shock to the country, and his death is sincerely mourned not only by the army but by every subject of our beloved sovereign whose grandson he was. By strict attention to duty he earned the praise of all who came in contact with him, and during the operations in Natal under General Hildyard he was twice mentioned in despatches. In accordance with his wishes the deceased Prince has been laid to rest among his comrades at Pretoria.

TREATMENT OF SUPPURATIVE PERICARDITIS: "IDEAL PERICARDOTOMY."

THE *Boston Medical and Surgical Journal* of Oct. 18th contains an important paper on this subject by Dr. C. B. Porter. The line of reflexion of the pleura and pericardium is very variable. Even at the level of the fifth space the pleura will often be found behind the sternal border. Hence some of the methods which have been used for opening the pericardium—trephining the sternum approach through an intercostal space and epigastric incision—should be discarded as there is danger of wounding the pleura or diaphragm. After experiments on the cadaver Dr. Porter devised the following "ideal operation" to meet the following indications: (1) to avoid opening the pleural cavity; (2) to open the pericardium opposite the point where drainage will remain good after the sac has contracted; and (3) to secure free permanent drainage. An incision is made from the middle of the sternum outwards over the fifth costal cartilage to its junction with the rib. The soft parts are reflected from the cartilage with a periosteal elevator, care being taken not to wound the pleura on the under surface. The cartilage is divided with a bone forceps near the rib and sternum. The internal mammary vessels thus exposed are ligatured in two places and divided. The triangularis sterni is separated from the sternum and pushed to the left. If fat is encountered a little careful dissection with a director exposes the pericardium, which is much thicker than the pleura. An aspirating needle is introduced (if this has not previously been done) to corroborate the diagnosis. If this is confirmed the knife should follow the needle. The pericardial incision is best made downward and outward, beginning close to the sternum. An operation essentially identical with this has been performed in five cases by Brentano.[1] The edges of the incision should be stitched to the soft parts. The writer recommends that irrigation should be used in all cases to remove masses of fibrin which may lie at the bottom of the cavity. The fluid must be warm and have a free exit, under which conditions no harm has been done in the reported cases—half of the total cases. The wound should be irrigated daily, and if the patient's strength permits it he should be turned on to his abdomen to facilitate drainage. 51 cases of incision of the pericardium have been reported. The pericarditis was purulent in 46 cases, rheumatic sero-fibrinous in two, hæmorrhagic from trauma in one case, and serous in two cases. The etiology was as follows: pneumonia with and without empyema (14 cases), broncho-pneumonia—in a child—(one case), osteomyelitis (five cases), wounds (four), blow on the chest (one), periostitis (one), necrosis of nasal bones (one), septic arthritis of knee (one), septic throat (one), abscess of buttock (one), empyema without pneumonia (five), pleurisy of doubtful origin (two), typhoid pleurisy (one), influenza (one), tuberculosis (two), rheumatic fever and endocarditis (three). In the 51 cases there were 31 deaths—a mortality of 60 per cent. Recovery took place in the two cases of serous pericarditis. In the 14 cases of pneumonia there were four recoveries. Dr. Porter's conclusions are as follows: 1. Pericardotomy is indicated in all cases of suppurative pericarditis. 2. Because of the varying relations of the pleura and the anterior position of the heart when the pericardium is distended aspiration is a more dangerous operation than open incision. 3. Pericardotomy can be done quickly and safely by resection of the fifth cartilage, in many cases under local anæsthesia. 4. In many cases of serous effusion open incision offers less risk and a speedier cure than aspiration.

[1] Deutsche Medicinische Wochenschrift, 1896, Band xxxii., S. 508.

THE REGISTRATION OF NURSE-CHILDREN.

THERE is a defect in the statute-book to which we, and not we alone, have repeatedly directed attention. It is the absence of any provision for regulating the boarding-out of single nurse-children. For some reason, probably more imaginary than real, it has been assumed that the interference of law is required only where two or more children are concerned. The case is one in which logic has been too little regarded. For the interest of one child is in no wise different from that of several, and though it may appear at first sight that the danger of neglect or other form of malpraxis is less in the former than the latter case experience has often shown, and still continues to show, that it may be equally great in both. Infant children are not very often sent out to board in this country. When it happens that they are so boarded the motive is to be found only too commonly in the apathy or the ill-will of parents to whom their mere existence is a disgrace. It is now generally recognised that, as a rule, the child is illegitimate which becomes the prey of the baby-farmer. If these two be brought together no second infant is needed to insure the inevitable result. In a case recently unearthed by the National Society for the Prevention of Cruelty to Children a child, aged six months, was found in the possession of a drunken "nurse" the mother of three children, all of whom, as well as the nurse-child, were shamefully neglected. The woman was very properly condemned to six months' hard labour, but it is noteworthy that her conviction was only indirectly due to her farming the nearly starved infant. This most important part of the delinquency would probably never have been known but for the inquiries of a School Board officer after her own children. Such a fact—and it is by no means an isolated example of its kind—should go far to convince any doubter that the registration of single nurse-children is both necessary and just. What objection can be brought against this needful provision it is difficult to see. We feel certain that if enacted it would meet with

approval in all classes of the community, and we trust that it will not be forgotten among the earlier domestic measures of the new Parliament.

COMPLIMENTARY DINNER TO SIR GEORGE HARE PHILIPSON.

AT a meeting of the Southern Council of the Durham University Medical Graduates' Association held at the rooms of the Medical Society on Nov. 1st it was unanimously resolved to invite Sir George Hare Philipson to a complimentary dinner at the Café Royal, Regent-street, on Thursday, Nov. 29th. All graduates of the University who are members of the association in the south are invited to join in honouring the guest of the evening, who is one of the founders of the association and one of its strongest supporters. Full particulars may be obtained from the honorary secretary for the south, Dr. T. Outterson Wood, 40, Margaret-street, Cavendish-square, W.

DOWLING *v.* DODS.

TOWARDS the end of last June an action was brought by Miss Agnes Dowling, a nurse, against Mr. Louis Ferdinand Dods, a medical man, for libel. The circumstances were reported in THE LANCET and may be remembered by our readers. The alleged libel was contained in a document purporting to be a certificate of lunacy and addressed to the local relieving officer. The defendant pleaded justification and privilege. The learned judge before whom the case was tried, Mr. Justice Darling, held that the occasion was privileged, but the jury found for the plaintiff, awarding her damages to the amount of £100. The plaintiff in her evidence showed herself to be the victim of dangerous hallucinations, so that the result of the trial surprised the medical profession and the public considerably, and a different issue upon appeal was anticipated. This week, before the Master of the Rolls, Lord Justice Collins, and Lord Justice Stirling, an application was made by Mr. Dods for judgment or a new trial. An attempt was made on Miss Dowling's part to show that Mr. Dods had been actuated by malice, but the judges held that there was no evidence of malice and judgment was entered for the defendant with costs. We congratulate Mr. Dods upon this result. We are satisfied that his conduct in the matter had its origin in a well-founded belief that Miss Dowling was of unsound mind and a source of danger to the community.

GENERAL PARALYSIS IN THE NAVY.

IN the November number of the *Edinburgh Medical Journal* Surgeon F. H. A. Clayton, R.N., assistant medical officer at the Royal Naval Hospital, Yarmouth, publishes an analysis of the statistics of general paralysis as observed in the Royal Naval Asylum for a series of years, and discusses the question of its etiology, with especial reference to sexual excess, syphilis, and alcoholism. An investigation of this disease as it occurs in the navy possesses the advantage that the inquiry is limited to a distinct class of men who are particularly subject to it, whose medical history since entry has been recorded, and whose physical condition, environment, and even mental characteristics are much alike. That seamen are more liable than officers to this disease appears from the fact that of 274 officers admitted in the last 25 years only 48 were paralytic cases, 12 of whom were warrant officers coming originally from the seamen class, whereas of 839 men 188 were paralytic cases. At present among 27 commissioned officers in the asylum there is no case, but, on the other hand, four out of six warrant officers and 18 out of 97 men come under that head. With respect to etiology Surgeon Clayton summarises his conclusions as follows: "Altogether, one inclines to accept the view that although syphilis or its toxins in many cases, by interference with nutrition, render liable to general paralysis many persons otherwise free, there is no evidence of direct connexion. The influences which act remotely are usually conditions tending to interference with nutrition and to promoting the growth of less highly organised tissues while the proximate influences probably act by lowering vitality. A 'specific' cause, as yet unknown, capable of developing the disease *per se*, though often aided by various factors, and which usually selects those apparently most healthy and vigorous both in mind and body, seems to be indicated by all the evidence." As is well known, general paralytics always become bed-ridden and in the concluding paragraphs of his article Surgeon Clayton gives some useful hints for the prevention of bed-sores.

HUXLEY MEMORIAL LECTURE.

To commemorate the anthropological work of the late Professor Huxley the council of the Anthropological Institute of Great Britain and Ireland has decided to found a public lecture, which will be called the "Huxley Memorial Lecture," and will be given annually at the opening of the winter session of the institute. The first Huxley Lecture will be delivered by the Right Hon. Lord Avebury, D.C.L., LL.D., F.R.S., and is announced to take place on Tuesday, Nov. 13th, at 8.30 P.M., in the Lecture Theatre of the Museum of Practical Geology in Jermyn-street, S.W., which as the scene of so much of Huxley's most impressive teaching, was felt to be the most appropriate place for such a ceremony, and has been placed for the occasion at the disposal of the Anthropological Institute. It is understood that Lord Avebury will take as the subject of his discourse Huxley's own contributions to anthropological science: a theme on which as a friend and colleague of Huxley, as himself a distinguished anthropologist, and as the first President of the Anthropological Institute he has peculiar authority to speak. Applications for tickets of admission should be addressed to the secretary, the Anthropological Institute, 3, Hanover-square, W., as early as possible.

DEATH UNDER NITROUS OXIDE.

A RECENT inquest held by Dr. Danford Thomas, the coroner for the county of London and Central Middlesex, upon a patient lately in the Great Northern Hospital, illustrates one of the few dangers which are incidental to the use of nitrous oxide. The patient, a man, aged 36 years, was admitted as an out-patient, declining to be taken as an in-patient, at the Great Northern Hospital. He was then suffering from suppuration in the structures of the neck. The swelling extended from the left ear round the jaw and well beyond the middle line. The left tonsil and structures between it and the outside were swollen and inflamed. As incisions were urgently called for the man was made to inhale nitrous oxide. This was given by one of the officers of the hospital who gave the gas diluted with air at first, but subsequently he employed pure nitrous oxide. An extremely small quantity of gas—a bag and a quarter—is said to have been inhaled and it is expressly stated that no re-breathing from the bag took place. When the ocular reflex was still present the incision was made and respiration ceased. It is said to have disappeared after the "excited stage." Possibly the man was never fully under the gas and the cessation of respiration was due to syncope from fear in the semi-conscious condition. However, the house surgeon stated at the inquest that the death was due to asphyxia. At the necropsy œdema of the larynx was found to exist and the

lungs were congested. Tracheotomy, which was performed as soon as the breathing failed, was unsuccessful and respiration never returned. These facts certainly point to heart failure as an element in the case. In all conditions in which the upper air passages are swollen and œdematous and respiration is hampered nitrous oxide is contra-indicated as it is liable to intensify the obstruction by promoting venous engorgement. That nitrous oxide is the safest of all known anæsthetics is now accepted on all hands, but as it is commonly given with little or no air there is a tendency to asphyxial complications, themselves not a necessary part of nitrous oxide anæsthesia. If there is a pathological state present in the patient these complications may become dangerous. Again, incomplete anæsthesia under nitrous oxide is a source of peril. In it heart failure not infrequently occurs and has on several occasions proved fatal. The death was no doubt asphyxial in so far as the œdema of the glottis probably under the gas closed the air passages completely; but whether death would have occurred if the nitrous oxide factor could have been eliminated is, we think, a question open to argument. As we read the report it appears that either too much or too little of the anæsthetic was given. We are certainly imputing no blame, for such cases are extremely difficult to deal with and the judgment of even the most expert anæsthetist might lead him astray in his endeavour to do his best for his patient.

MARGARINE, WINE, AND TOMATOES.

MODERN adulteration is a fine art and there is little doubt that fraudulent practices often escape detection. Any proposal, therefore, to make detection more certain must be very carefully considered. Some time ago it was suggested that margarine should be compulsorily coloured in order that it may be distinguished from the yellow colouring of butter. Of course, if margarine manufacturers were compelled to make their margarine blue or pink there could be no possibility of mistaking this substitute for butter. A better proposal, however, would appear to be that of adding an infinitesimal proportion of phenol phthalein to margarine, which would give the margarine no colour at all until it were made alkaline by adding soda to it, when it would turn a brilliant carmine. The question remained to be answered, however, as to whether the presence of such a minute amount of coal-tar derivative would be injurious. It has recently been ascertained that even large quantities of phenol phthalein are quite harmless and produce no unpleasant symptoms whatever. This device could be applied to a number of food substitutes, the recognition of which as such would thereby be much facilitated. It is well known that low-class wines are frequently worked up from the residue of crushed grapes after the bulk of the juice has been expressed. Such wine, which is known as marc wine, may or may not be wholesome. It is certain to be of feeble quality. At any rate, it is desirable that the detection of such wine should be easy. Phenol phthalein added in the proportion of 1 part to 100,000 of wine would not make the wine a bit more unwholesome, whilst the addition of alkali to the wine would result in a brilliant red colour which would brand at once its origin. Injury to health may obviously arise by the consumption of unsound or unripe articles of food, and the worst form of fraud is that in which a colouring or preservative agent is used to conceal bad characteristics. It would appear, for example, that tomatoes are cunningly coloured in order to make them look attractive and ripe. The danger of consuming these articles is great, for it is well known that unripe and unsound food is constantly a source of diarrhœa and other serious disturbances. This proceeding is not justified by the fact of the colouring matters being possibly innocuous. Amongst the colours so employed are the coal-tar colours and cochineal, both of which may be detected by certain chemical tests. The tomatoes generally coloured are those which are preserved. It is well that the whole subject of the artificial colouring and preservation of food is receiving the attention of a Departmental Committee, whose labours we hope will shortly be finished, and whose pronouncement, we trust, will give power to exercise a greater control over this form of tampering with food.

A PARISH MEDICAL OFFICER FOR SOUTH UIST.

IN our issue of Oct. 20th there appeared an advertisement for a medical officer for the parish of South Uist (Northern Division). We do not desire to put obstacles in the way of South Uist obtaining a competent medical officer; it is an isolated parish and its medical officer will have great responsibilities; but though we have inserted the advertisement we think it our duty to remind all candidates that the Parish Council of South Uist was responsible for the scandalous treatment of Mr. J. Lamont to which we have made frequent reference in our columns. All candidates for the post should demand from this parish council satisfactory assurance concerning fixity of tenure, free annual holiday, and adequate salary.

THE HUGHLINGS JACKSON LECTURE OF THE NEUROLOGICAL SOCIETY.

THE Hughlings Jackson lecture of the Neurological Society of London for 1900 will be delivered by Professor Hitzig of Halle at 9 P.M. on Thursday, Nov. 29th, in the Theatre of the Examination Hall, Victoria Embankment, W.C., on "Hughlings Jackson and the Cortical Motor Centres in the light of Physiological Research." It will be remembered that this triennial lectureship was founded by the Neurological Society in honour of Dr. Hughlings Jackson, its first president, who also, three years ago, delivered the first Hughlings Jackson lecture. All members of the medical profession are invited to be present at the lecture which will be delivered in English.

OBSCURE CEREBRAL SYMPTOMS SIMULATING TUMOUR OF THE BRAIN AND ENDING FATALLY.

DR. A. ENGELHARDT of the Augusta Hospital in Cologne contributes to the *Münchener Medicinische Wochenschrift*, No. 36, 1900, an interesting case where the clinical symptoms pointed to an obscure cerebral lesion, presumably cerebral tumour, but where the necropsy revealed only a condition of degeneration of the optic tracts associated with profound anæmia. The importance of the case lies in the fact that owing to the uncertainty of diagnosis no attempt was made to carry out artificial feeding of the patient who had refused food during the last few weeks preceding death. The case was that of a young woman, aged 18 years, who was admitted to hospital on March 11th, 1897. Her family history was good and the patient's own personal history showed no serious illness. She had menstruated since the age of 13 years and suffered at times from headache and chlorosis. Latterly there were present disturbances of vision and temporary losses of eyesight, and ophthalmoscopic examination revealed the presence of optic neuritis. Syphilis could be wholly excluded, and it was concluded that a cerebral tumour was present. Her sight rapidly failed and a grey optic atrophy supervened with complete blindness. Headache was then severe, the urine was free from albumin and sugar, and as microscopic examination of the blood showed no anomaly except a simple anæmic condition (the hæmoglobin being 50 per cent. of the

normal) the diagnosis of cerebral tumour was rendered probable. The knee-jerks were abnormal, the right being excessive and the left being diminished. She gradually grew feeble and paralysed and the sense of smell seemed entirely to have disappeared, while epileptiform convulsions now developed. A right-sided hemianæsthesia was noted. The rectal and vesical functions were retained. Her appetite was lost and she refused food and began to get emaciated, but this being regarded as due to a growing cerebral tumour no attempt was made at artificial feeding. The patient died in a condition of inanition on March 17th, 1898. The necropsy revealed a condition of optic atrophy, with degenerated fibres (staining black with Marchi's method) in both optic nerves and tracts. No cerebral tumour was found, but the brain appeared very pale and anæmic and unusually dry. The condition was in fact one of profound anæmia with secondary cerebral symptoms, so closely simulating those of tumour, however, that no treatment was directed towards the real disease to which the patient succumbed.

DRY DISINFECTION OF THE HANDS.

IN a recent annotation[1] we mentioned some methods of disinfecting the hands. Yet another method is that devised by Dr. Vollbrecht and described by him in the *Archiv für Klinische Chirurgie*, 1900, p. 554, the detergent medium in this case being a kind of solidified emulsion of soap and alcohol. The mode of preparation seems simple. 60 grammes of good "almond" soap having been scraped into a mortar standing in a hot-water bath enough alcohol at 97° is added to dissolve it. As soon as the solution has taken place the remainder of the alcohol (one litre in all) is added and the whole is then allowed to stand until the contents of the mortar have become solid. The product having been cut into cakes should then be wrapped in tin-foil and stored for use. 35 grammes (about one and a quarter ounces) of the soap (price two centimes) are enough for one detergent operation, and as the melting point is 110° F. it can be carried in the pocket. The process of disinfection is thus described. The soap having been carefully spread over the hands should be rubbed in vigorously with a sterilised brush during five minutes. The alcohol gradually evaporates but the amount of soap left behind is not enough to make the hands feel greasy or to interfere with the handling of instruments. No lather is produced unless water be added. The texture of the skin is in no wise injured by the soap which, on the contrary, preserves and renders it soft. According to the inventor, who describes an elaborate system of testing, the results from the point of view of disinfection are quite equal to those obtained by the Mikulicz method. If need be the soap can be used for sterilising instruments by heat as it is readily inflammable.

THE QUESTION OF THE COMMUNION CUP.

WE are glad to see that the question of the danger of infection which arises from the use of a common chalice at the administration of the Holy Sacrament, to which reference was made in THE LANCET of Oct. 13th (p. 1088), has been taken up by our ecclesiastical and other contemporaries. The *Church Times*, the *Guardian*, the *Pilot*, and the *Record* have all referred to the matter. The *Guardian* suggests that a committee of Convocation which might select physicians as assessors might "profitably consider the point"; the *Church Times*, in its leading columns, suggests simply the appointment by the bishops of a commission of inquiry upon which medical men might serve, to be followed by a commission of liturgical experts; and the *Pilot* says: "If medical science proves that the danger is more general than was formerly supposed the Church must be prepared to advance *pari passu* to greater precaution." Whatever the constitution of the inquiring body may be we hope that the authorities of the Church will not delay to take the matter into consideration. Instances of latitude from the strict letter of the Prayer Book as formulated some 300 years ago have already received the sanction of more than one of the bishops and if the times are not ripe for a revision of the Book of Common Prayer we may yet hope to see the Ordinaries of the respective dioceses giving directions to their clergy by means of which the weaker brethren may be saved from offence. A somewhat similar question arose in the Roman Communion not so very long ago with reference to infection by the use of common holy water stoups. An ingenious delivering apparatus was invented by Mr. J. J. Bruns of Arnhem[1] to overcome this difficulty and this apparatus was submitted to the Archbishop of Utrecht and approved by him. There are always those who delight in putting difficulties in the way of reforms, but we cannot but hope that in this matter the importance of the question may serve to emphasise the need for its thorough consideration.

[1] Ps. xci.

THE SOCIETY OF APOTHECARIES OF LONDON: THE TITLE OF LICENTIATES.

SINCE the resolution of the Court of Assistants of June 19th, 1900, was communicated to the medical journals constant applications have been made by Licentiates in reference to the titles which they may adopt and suggestions have been offered as to particular letters and signs descriptive of the qualification of L.S.A. 1886. By a further resolution of the Court of Assistants of Oct. 8th it has been resolved that the only titles which the Society can authorise as a proper description of the qualification L.S.A. 1886 are those of Physician and Surgeon, either added to the title of L.S.A. 1886 or used alone. And it was further resolved that the Society should discourage in every possible way the use of any other titles or letters on the ground of its tending to cause confusion and to destroy uniformity. The clerk of the Society, Mr. J. R. Upton, from whom we obtained this information, adds that the Society trusts that its Licentiates will coöperate in adopting a course which, it is believed, will prove beneficial to themselves.

MR. MANSERGH ON WATER-SUPPLY.

THE inaugural address to the Institution of Civil Engineers was delivered by Mr. James Mansergh on Tuesday, Nov. 6th. It appears from the abstract published in the *Times* that the speaker in the course of his remarks covered a great deal of ground and expressed with some freedom his views on potable water. An idea may be obtained of the variety of the matter brought under review when we say that the orator quoted largely from an American translation of the well-known work of Frontinus on the water-supply of ancient Rome and from the Transactions of the Society for Psychical Research on the question of "water-finders." These interesting matters are of less importance to medical men than are questions concerning the purity of the water that we drink. And on this subject Mr. Mansergh may be considered an authority, for he was a member of the Balfour Commission which was appointed to investigate the quantity and quality of the metropolitan water-supply. Mr. Mansergh's views on pathogenic organisms, according to the *Times* report, are as follows:—

"We were" he said, "still groping in the dark as to the work these ubiquitous micro-organisms were designed to do in the economy of nature. Might it not be wiser to assume the majority of them to be actively beneficent instead of being simply harmless? In removing from the water drunk in London 98 per cent. of those found in the river in order to capture a stray typhosus or Löffler's bacillus (neither of

[1] THE LANCET, Jan. 27th, 1900, (p. 252).

which had ever been found in the raw water) might we not be doing harm rather than good? Still this pessimistic view need not trouble us much, for health statistics proved that the risk of harm arising either from the presence in the water of so-called pathogenic organisms or from the removal of the harmless ones was so small that it might be calmly disregarded."

These comfortable words of Mr. Mansergh with regard to pathogenic germs were followed by a warning as to the danger which may be apprehended from water derived from sources hitherto considered pure. "A word of warning might, however, be said about water obtained from elevated and sparsely-populated moorlands, for," he said, "the danger was greater if such water became infected, especially if not passed into impounding reservoirs, than if the supply were taken from a large river." We hope that the members of the Institute of Civil Engineers and the distinguished guests passed a pleasant evening and returned home reassured by the fact that the water of London with its pathogenic germs which can be calmly disregarded is still derived chiefly from the Thames and the Lea, uncontaminated with any water from "sparsely-populated moorlands"—the "pure nectar from Wales," as it was characterised by Lord Llandaff.

THE USE OF TOBACCO ON ACTIVE SERVICE.

THE war in South Africa has taught many things of greater and of less importance. Perhaps nothing that it has demonstrated has been more marked than the important part which tobacco plays in the soldier's existence. Whether this is to be reckoned as a great fact or a small one there can be no doubt about the truth of it. Yet the Duke of Wellington's armies had no tobacco worth speaking of. If they did not forbid its use, at any rate the Iron Duke's officers were directed to advise their men strongly against it. What a curious contrast with the campaigning in South Africa, where marches and privations as long and as stern as any suffered by our great-grandfathers were borne by the volunteers and soldiers of to-day with a grumble only when their "smokes" failed them. We have it from many who took part in the forced marches leading to Paardeberg, to Bloemfontein, to Pretoria, and beyond, that when rations were but two or three biscuits a-day the only real physical content of each 24 hours came with the pipe smoked by the smouldering embers of a camp fire. This pipe eased the way to sleep that might otherwise have lingered, delayed by the sheer bodily fatigue and mental restlessness caused by prolonged and monotonous exertion. It is difficult, then, to believe that tobacco is anything but a real help to men who are suffering long labours and receiving little food, and probably the way in which it helps is by quieting cerebration—for no one doubts its sedative qualities—and thus allowing more easily sleep which is so all-important when semi-starvation has to be endured. The cases of acute mental derangement in the course of campaigns such as the present are many. There have indeed been many in South Africa. It would be most profitable and interesting could medical officers have taken special note of the capacity for sleep previously evidenced by those who broke down and also of their indulgence or non-indulgence in tobacco. We are inclined to believe that, used with due moderation, tobacco is of value second only to food itself when long privations and exertions are to be endured. Two features are to be noted with regard to the smoking practised on active service. It is almost entirely in the open air and it is largely on an empty stomach. The former is always an advantage; the latter we generally reckon a most unfavourable condition. Shall we see in the near future patients with tobacco amblyopia or smoker's heart acquired while the trusting friend of tobacco thought that he was enjoying unharmed the well-earned solace of a hard day's march? We believe not, and that the open air will have saved what might have been the untoward results of smoking when unfed.

MEETING OF THE GENERAL MEDICAL COUNCIL.

SUMMONSES have been issued for a meeting of the General Medical Council on Tuesday, Nov. 27th, at 2 P.M. The Penal Cases Committee will meet on the preceding Saturday and the Executive Committee on Monday, Nov. 26th.

THE INSPECTION OF CONVENTS.

A LETTER which appeared in the *Times* of Nov. 5th raises a most important point. We are not among those who consider that convents are dens of iniquity, that the bricking up of recalcitrant nuns is of daily occurrence, or that excavations in the back-gardens of convents would reveal facts such as those which horrified the pious inhabitants of Cologne when, in 1106, they dug anew the foundations of their walls and came across the bones of the 11,000 virgins and others. But the correspondent to whose letter we refer mentions facts, which so far have not been denied, which reveal a most dangerous state of things. The doors (of the convent to which the writer refers) into the street are locked at night and the keys are handed over to the reverend mother, there being no means of exit until she is communicated with. An outbreak of fire occurred which fortunately did not end in disaster; but how easily it might have done so. To our minds, as regards sanitary and hygienic conditions, the palace, the ordinary dwelling-house, the convent, and the tenement house should all be under the same regulations. Epidemics and fire are no respecters of persons or of religious communities, and though the promise of angelic protection still holds good, yet it was only given to those in a way[1]—namely, in a definitely marked out path, a point which the Devil omitted when he quoted the passage for his own purpose. Not to use means which have been provided for our safety is universally recognised as demanding that punishment which is allotted for those who tempt God. True, there must be discipline, but discipline must not be such as to combine presumption.

THE annual dinner of the Aberdeen University Club, London, will be held at the Trocadéro Restaurant on Wednesday, Nov. 21st, at 7 P.M. Sir William McGregor, K.C.M.G., Governor of Lagos, will take the chair, and members intending to dine should communicate with the honorary secretaries, Mr. J. A. Robson and Dr. James Galloway, at 54, Harley-street, W.

DR. JOSEPH PRIESTLEY, medical officer of health of Lambeth, who was recently selected by the Municipality of Bombay for the appointment of Executive Health Officer to the City of Bombay, has not seen his way to accept the position. The borough of Lambeth is to be congratulated upon retaining the services of Dr. Priestley.

MR. HUTCHINSON, F.R.S., has offered, and his offer has been accepted, to build and fit out an educational museum in connexion with the Friends' School at Ackworth, near Pontefract, Yorkshire. Museums on similar lines have been provided by Mr. Hutchinson's generosity at Haslemere, Surrey, and at his native town, Selby, Yorkshire.

PROFESSOR A. H. YOUNG, M.B. Edin., F.R.C.S. Eng., has been appointed Representative of the Victoria University for five years on the General Medical Council in succession to the late Dr. D. J. Leech.

[1] THE LANCET, Oct. 27th, 1900, p. 1220.

PROFESSOR CALMETTE ON PLAGUE.

PROFESSOR A. CALMETTE, Director of the Pasteur Institute at Lille, in the course of the first Harben Lecture of the Royal Institute of Public Health, delivered at the Examination Hall of the Royal Colleges of Physicians of London and Surgeons of England on Nov. 7th, said that the recent appearance of plague at Glasgow had decided him to choose the study of this disease as the subject of his lectures. Plague now menaced all the maritime nations of the globe and it had become necessary to take rigorous measures to stop its extension. The progress of hygiene and the knowledge acquired during the last five years on the etiology, treatment, and prophylaxis of the affection enabled it to be combated very efficaciously and its centres to be rapidly circumscribed. It was known that the plague bacillus was found in the buboes and sputa of the patient, that it was also frequently found in the blood, that it had the form of a short bacterium, slightly ovoid, that it was easy to stain by the ordinary laboratory methods, and that it could be cultivated on the usual media.

From a clinical point of view the plague assumed two clinical forms—bubonic plague and plague without buboes, the former being more commonly observed. Persons attacked by bubonic plague ordinarily suffered at the commencement of the illness from a sensation of great weakness with heaviness of the head and painful pricking or tingling at the place where the buboes would appear. The patient was suddenly taken with repeated shivering, of short duration at first but getting longer and longer. Intense pain, great thirst, alimentary or bilious vomiting, and diarrhœa afterwards occurred. Glandular congestion, ordinarily limited to a single group of glands, appeared on the same day or on the day after. A bubo appeared with little delay; it was accompanied by a painful tumefaction, the least pressure on which caused the patient to cry out. The temperature rose very quickly, the pulse was rapid, full, often dicrotic, but regular, and the breathing was quickened. The facies was typical: red, haggard, weeping eyes with an expression of agony and terror, and the tongue dried, furred, and red at the edges and point. Sometimes at the commencement the patients, after a short period of excitation and mad terror, were smitten suddenly with an overpowering somnolence and collapse; they then resembled subjects struck with serious adynamic typhoid fever. The head was thrown back, the eyelids were half closed, the mouth was slightly open. When they were spoken to in a loud voice they looked around with a stupefied expression, replied with much difficulty, and dragged their words like intoxicated persons. When exciting phenomena dominated them the patients suffered from hallucinations of sight or hearing, believing themselves to be surrounded by extraordinary animals, as in alcoholic delirium. Sometimes they showed very clear symptoms of meningitis, opisthotonos, converging strabismus, dilatation of the pupils, delirium, cramp of the arms, flexion of the legs, and fibrillary movements of the muscles of the face. The localisation of the glandular lesions determined the special attitude of the patients. The least movement caused them to shriek; the skin was frequently covered with petechiæ; in grave cases turbid sero-sanguineous pustules formed, or even actual carbuncles, which latter characterised the special type to which ancient authors gave the name of "black plague." On auscultation signs were constantly found after the third or fourth day of broncho-pneumonia. The cough was dry and painful, terminated by the expectoration of frothy sputa, slightly viscid, yet streaked with blood and containing the plague bacilli in great quantities. In grave cases the heart presented signs of an alteration of the myocardium, with prolongation of the first sound and other cardiac symptoms. In these grave cases the patients scarcely micturated at all and the urine, at times containing blood, was very acid and albuminous. Except in entirely benign cases, suppuration of the buboes was the rule and was generally of good augury, as it indicated that the system was defending itself against the plague infection and that the infection remained localised. Convalescence was always long. The forms of plague without buboes and without apparent glandular congestion were much rarer than the forms of classical bubonic plague which he had just described. The primary pneumonic plague resulted from the penetration of the microbe into the respiratory channels and it was to this exceedingly grave form that Dr. Müller and his laboratory assistants succumbed in 1898 at Vienna. Another and still rarer form of plague without buboes was plague septicæmia or pesticæmia which developed with extreme rapidity and was caused by the intense pullulation of the plague bacillus in the blood and in the organs. It was not exactly known where the virus first effected an entrance in these cases; perhaps the microbe penetrated by the intestine or directly into the blood through some little open sore or cut. Post-mortem examinations of patients who had succumbed to this particularly severe form showed very congested mesenteric and retro-peritoneal glands of a characteristic purplish colour like dregs of wine, which fact seemed to support the hypothesis of penetration of the virus by the gastro-intestinal channels. When the plague was studied in an epidemic centre all the forms above described were found, but it sometimes happened that the first cases did not present clear characteristics and it was thus possible that they might be incorrectly diagnosed. At Calcutta Dr. Simpson and Dr. Cobb reported the presence of the plague bacillus in cases of inguinal glandular congestion which had been noticed with extraordinary frequency among the men of a certain regiment stationed at Hong Kong during the epidemic of 1894. An official Commission appointed to investigate the evidence of Dr. Simpson and Dr. Cobb declared that they were cases of simple non-venereal buboes. In reality the commission was wrong. It was dealing with an exhausted non-malignant form of plague that ancient writers had already recorded under the name of *pestis mitior*, as frequent at the commencement and the end of great epidemics. Such facts proved how little the best clinical examination alone could suffice to make a diagnosis of plague. Such diagnosis could only be determined when the bacteriological examination demonstrated the presence of the microbe of Yersin in the glandular fluid in the blood or in the sputum. At the commencement of a case of bubonic plague, in order to ascertain whether the plague microbe was present or not, it might be feared that to make a puncture with Pravaz's syringe right into the lymphatic tissues to extract therefrom some drops of fluid to be fertilised in the usual manner and examined immediately after colouration would spread the infectious germs beyond the glands in which they had been localised. But to-day with the aid of sero therapy there was no foundation for that fear, because to put the patient beyond the danger of any possible reinfection it was only necessary, directly after the puncture with Pravaz's syringe, to inject a small quantity (about five cubic centimetres) of anti-plague serum into the middle of the gland or at a short distance from it. The extracted fluid should be placed immediately in tubes of nutritive gelose and in tubes of bouillon of beef or of veal at a temperature of from 25° to 30° C. for a period of 24 hours. At the same time a small quantity should be spread out on glass slides coloured with methylene blue or thionin. On gelose the appearance of the microbe colonies did not present any very specific characteristics, but their number indicated the degree of gravity of the infection. In the meat bouillon the specific characteristics were more precise. The bouillon remained clear and transparent and contained some slight whitish clots floating on the surface, which sank to the bottom of the tube at the least movement. If the bouillon was turbid it was evident that some microbe other than the plague bacillus, perhaps of a mixed infection, was present. In such circumstances the diagnosis should be made more precise by inoculating susceptible animals with the culture. The mouse especially took the plague and it was only necessary to prick this little animal in the thigh with a needle dipped in the culture on gelose in order to give it the disease and cause its death in from 36 to 48 hours. When the inoculated animals succumbed very characteristic lesions were found on the bodies and the plague bacilli were in great quantities in all the organs, especially in the glands, the spleen, and the liver. To diagnose a case of suspected pneumonic plague it was necessary to collect as much as possible of the rusty sputum, to dilute it with a small quantity of boiled water, and to fertilise several tubes of gelose with platinum wire, the temperature not exceeding from 20° to 23° C. At this relatively low temperature the pneumococci did not germinate, the streptococci germinated badly and very slowly, while the plague bacilli developed rapidly. At the end

of two or three days the plague colonies were very numerous. They must then be examined and transferred to fresh gelose tubes in order to get them in a pure state.

THE TWENTY-NINTH ANNUAL REPORT OF THE LOCAL GOVERNMENT BOARD (1899-1900).

A SOMEWHAT melancholy feature of the annual report of the Local Government Board this year, which was issued last week, is the record of the fact that since the last report was issued death has overtaken no less than six of the important officers of the staff. Towards the close of the official year ending March 31st, 1900, Sir Richard Thorne Thorne, K.C.B., F.R.S., the medical officer, died after a brief illness, and the opportunity is taken in the present report of placing on record the sense of the staff of the Local Government Board "of his eminent services in relation to the public health and of the loss which the country has sustained by his death." The Local Government Board also have to regret the loss through death during the year of the services of Major-General A. de Courcy Scott, R.E., as examiner under the Metropolis Water Acts, and of Professor Sir Edward Frankland, K.C.B., F.R.S., as water analyst. Mr. Charles Perrin, M.I.C.E., has succeeded Major-General Scott as water examiner and the duties performed by Sir Edward Frankland are now carried out at the Government Laboratory under the superintendence of Dr. T. E. Thorpe, F.R.S.

In some respects it may be taken, therefore, that death, which has been so conspicuously busy in this State department, accounts for the incompleteness of certain sections of the report. Mr. Perrin, in his report, for example, on the metropolitan water-supply, deemed it desirable "to compile a report in the usual form with a view to maintaining continuity in the statistical information available for future reference." As he admits, this information could not in any degree be based on personal knowledge of the incidents of the year, but has been compiled from facts already on record and "from information kindly supplied by the officers of the water companies." Similarly the chemical examination of the metropolitan water-supply lacks continuity. The reports for the first seven months of the year were made by the late Sir Edward Frankland, those for August and September were made by Dr. Percy Frankland, F.R.S., and those for the rest of the year by Dr. T. E. Thorpe. Under these circumstances no general report could be made, but a memorandum based on the monthly reports was prepared in the department. The diagrams thus compiled are not complete and a note at the bottom states that the Board do not possess the information necessary (in some respects) to complete the table (or tables) with regard to the months of October, November, and December. There are no bacteriological records at all and the quality of the London water-supply according to chemical examination is not referred to in the synopsis. Mr. Perrin reports, however, in regard to filtration that the year 1899 was on the whole favourable for the operations of the companies supplied from the Thames and Lea, the Thames water being in good condition during 314 days, moderately discoloured and turbid during 40 days, and exceptionally muddy and turbid on only 11 days of the year.

In regard to the working of the Food and Drugs Act it appears that the number of samples secured for analysis is steadily increasing and with this increase, as might be expected, there is a reduction in the percentage of the samples reported against. In some districts still there were no samples taken. The proportion of samples taken in 1899 was two per 1000 of the population. The interesting and important observation is made that in the large number of districts where the proportion of samples taken did not reach three per 1000 of the population the samples reported against averaged 10·1 per cent.; in those where the proportion taken was between three and four per 1000 the adulterated samples were 8·7 per cent; while in the districts where samples were taken at the rate of over four per 1000 the rate of adulteration fell to 7·5 per cent. These results surely justify the opinion of the Select Committee on Food Products Adulteration, 1894-96 that a proportion of samples much in excess of one per 1000 of the population should each year be taken for analysis in the district of every local authority. The proportion of adulterated samples was slightly higher this official year than last year, the figures being respectively 8·7 and 9·4 per cent. Milk was adulterated to the extent of 10·5 per cent. of 21,964 samples examined, which is an increase on the previous year. Three or four years ago London had shown an improvement in its rate of milk adulteration but the percentage, which had been 14·6 in 1897 and 12·9 in 1898, rose in 1899 to 15·4. Only nine of the "32 great towns" of the Registrar-General's weekly returns had a more unsatisfactory rate of milk adulteration than London in 1899. The percentage of adulteration of drugs was greater than that of food, no less than 17·8 per cent. being classed as adulterated. Nearly one-fifth, however, of the samples taken were of camphorated oil and camphor liniment, of which 28 per cent. were condemned generally because of a deficiency in the proportion of camphor present but sometimes because (in addition) mineral oil was substituted for the olive oil prescribed by the British Pharmacopœia.

A large sum of money represented in loans to the joint Boards has been sanctioned in respect of systems of sewerage and sewage disposal, the provision of waterworks and of cemeteries, the provision and equipment of hospitals, and the purchase of land in connexion with those objects. Many applications have been made to the Board for sanction to loans for the execution of works of sewage disposal involving the adoption of the bacterial processes. In view of the fact that a Royal Commission is inquiring into the subject it is interesting to hear the decision of the Local Government Board on this question of loans to be devoted to new processes of sewage disposal which are thus *sub judice*. Although these processes, it is stated, must in many respects be regarded as in the experimental stage the Local Government Board have not declined to consider these applications where the process was to be supplemented by land treatment of the effluent from the bacterial filters. In each case, however, a local inquiry has been held and full evidence has been required to show that the process contemplated is likely to prove of considerable assistance in the purification of the sewage. Where such loans have been sanctioned it has been the usual practice of the Board to require an undertaking from the local authority that in the event of the method adopted not proving satisfactory some other approved method of sewage disposal would be substituted.

The returns relating to the new by-laws and regulations under the Public Health Acts afford evidence of continued activity on the part of local authorities in making by-laws on the more important matters—such as scavenging, the prevention of nuisances, the regulation of offensive trades, the regulation of common lodging-houses, and the construction of buildings.

As to vaccination returns, these will be published *in extenso* in the report of the medical officer for the year 1899-1900 which will appear as a supplement to the present volume and will contain information as to some of the inspections which are only briefly referred to in the present report, as well as to other sanitary questions which have specially engaged the attention of the medical staff during the year.

In regard to the control of the manufacture of alkali and chemicals it appears that the supervision exercised by the staff of special inspectors continues to be attended with good result. On the whole, however, there has been a slight increase in the proportion of nuisances arising from chemical trades which may be referred perhaps to the extra strain put upon the manufacturing plant in consequence of the satisfactory expansion of general trade. Numerous chemical businesses have been supervised, and care appears to be taken as far as possible to utilise such improvements as the growth of scientific knowledge suggests with the view of preventing nuisance from the discharge into the atmosphere of deleterious chemical compounds.

It is interesting to notice that pauperism steadily declines and that during the last official year it reached the lowest figure on record. Again, the report, referring to the returns of deaths from starvation, states than in few instances was death ascribed solely to want of sufficient or proper food. For the most part the deaths appear to have been due to disease consequent upon, or accelerated by, want or exposure, or both, and in some instances to self-neglect. Complaints are made in respect to the sick-wards of certain workhouses which are said to be structurally very bad as well as bad from a sanitary standpoint, comparing most disadvantageously with hospitals erected by voluntary movement and organisation.

The report teems with the usual statistics in regard to the relief of the poor and the poor-rate, and local taxation and valuation.

Obituary.

WILLIAM ANDERSON, F.R.C.S. ENG., L.R.C.P. LOND.,

SURGEON TO ST. THOMAS'S HOSPITAL; PROFESSOR OF ANATOMY TO THE ROYAL ACADEMY OF ARTS.

WILLIAM ANDERSON was born on Dec. 18th, 1842, in London—as he used to say, within the sound of Bow bells. He was educated at the City of London School. On leaving school he did not immediately ente on the study of medicine, but became an art student at the Lambeth School of Art. There he attained considerable proficiency as a draughtsman and acquired an interest in art which he retained through the whole of his life and which was a great source of pleasure to him besides being useful in his anatomical teaching. In 1864 he entered St. Thomas's Hospital where he obtained college prizes in three successive years, and in 1867 carried off the Cheselden medal—the highest prize in surgery. He obtained the qualifications of M.R C.S. Eng., and L.S A. in 1867, that of L.R.C.P. Lond., in 1868, and in 1869 became Fellow of the College of Surgeons. After qualifying, Anderson was for a time house surgeon at the General Infirmary, Derby, but returned to St. Thomas's Hospital, where he was appointed surgical registrar and demonstrator of anatomy on the opening of the new hospital in 1871. As a demonstrator of anatomy he was a popular and indefatigable teacher till an event occurred which altered for a time the whole course of his life. The Japanese Government having founded a Naval Medical College at Tokio wished to place an English surgeon at its head. The selection was intrusted to some eminent members of the profession in London, by whom Anderson was appointed, not without competition. He sailed in 1873 with his newly-married wife to take up his duties and remained in Japan nearly seven years.

With the position of Director of the Naval Medical College Anderson had to combine the duties of an almost universal professor. He lectured on anatomy, physiology, and surgery, and presumably on medicine also. In his earlier lectures he had the assistance of an interpreter, a Japanese student who knew English and translated his lectures orally, but afterwards (how soon we cannot say) he lectured in Japanese. Few Europeans it is said acquired the language more rapidly or spoke it more accurately. His lectures, judging from the reports of some students who afterwards came over to England, were highly valued by his Japanese pupils, some of whom became deeply attached to him. The position was in many ways a very pleasant one to Anderson. His unprejudiced and genial nature rapidly adapted itself to its new surroundings. He lived on intimate terms with the diplomatic circle and the English colony and became acquainted with Japanese life also. Soon after his arrival he was appointed medical officer to the English Legation at Tokio.

In one respect especially his residence in Japan was fortunate as giving him a rare opportunity for the exercise of his critical knowledge of works of art. His early art education had given him the tastes not only of an artist but of a collector. Indeed, he took out with him to Japan a small collection of old engravings, etchings, and illustrated books of anatomy, in which he took great delight. This collection was, however, swept away by a fire, from which he himself, his wife, and infant child escaped with little more than such clothes as they had on, and a valued microscope, the parting present of his students at St. Thomas's Hospital, which was snatched from the flames by a faithful domestic. The same calamity occurred a second time, but Anderson more than made up his losses by his valuable collections of Japanese art. Most foreigners collected curios, and no doubt at that time got them there on much easier terms than in the present day. But Anderson did more than amass a miscellaneous collection of beautiful objects. He made a serious study of the history of Japanese pictorial art; and with his practised eye and good judgment was able to collect a series of drawings and paintings of different periods which is said to have been in some respects unequalled and which was more carefully housed than his earlier collection.

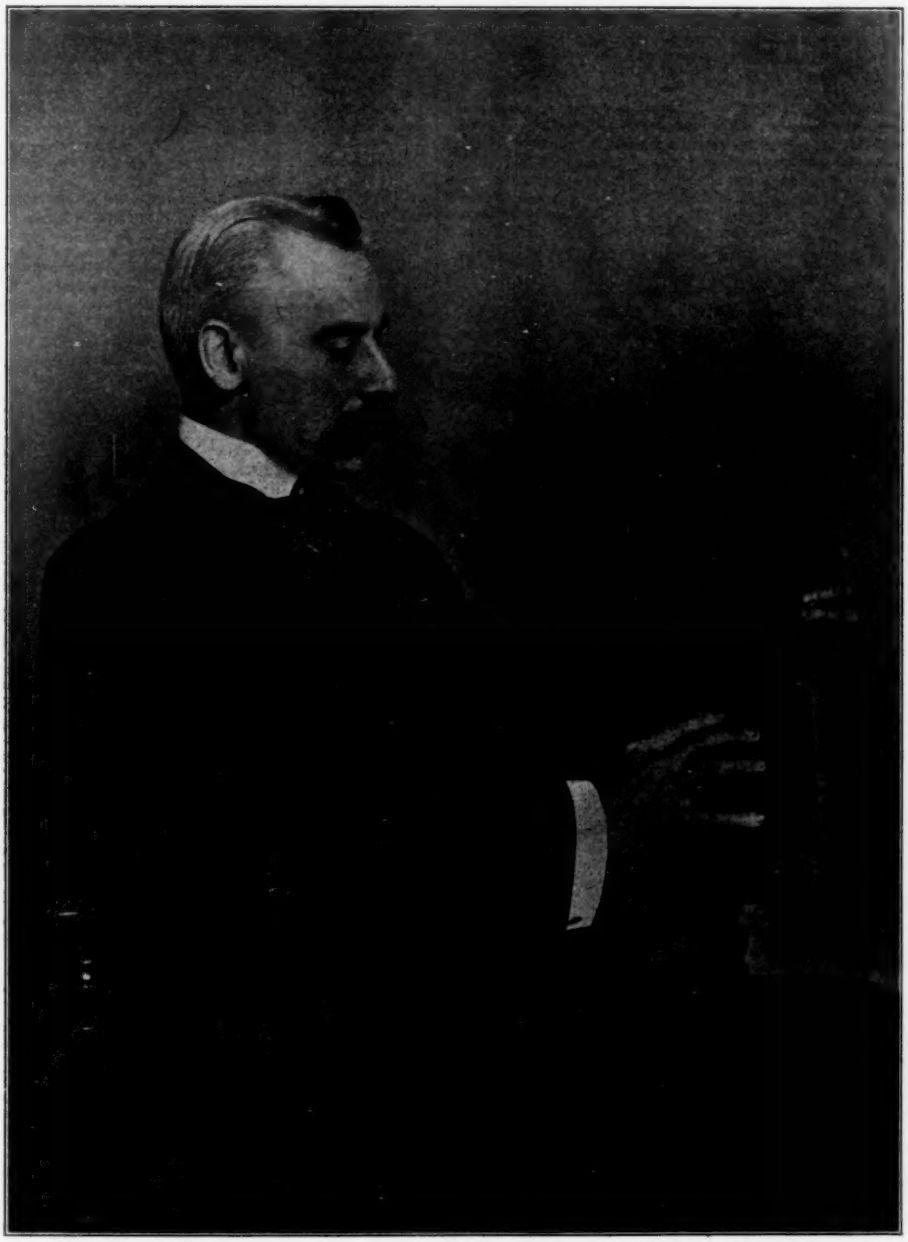
In 1880 a vacancy occurred at St. Thomas's Hospital owing to the much regretted retirement through ill health of Mr. W. W. Wagstaffe, and it was resolved to invite Anderson back to take the place of assistant surgeon and joint lecturer on anatomy. He thus re-joined his old hospital and again was highly valued as a teacher. In teaching anatomy he had one advantage which it is not given to all anatomists to possess—namely, his power of drawing. His sketches on the blackboard were the wonder of his pupils. Beginning with a bold but unerring outline he would gradually fill in the details till a finished picture, more instructive than a ready-made diagram, was before the class. The same power he displayed, and before more critical spectators, when lecturing on anatomy to the Royal Academy.

The course of Anderson's life at St. Thomas's Hospital much like that of other hospital surgeons. From assistant surgeon he became full surgeon in 1891, having in 1887 added to his general work the charge of the Department for Diseases of the Skin, a subject in which he took much interest; but he never gave up teaching anatomy till he was appointed in 1898 joint lecturer on surgery. He belonged to no other hospital or school and all his professional interests were connected with St. Thomas's Hospital. In one other capacity he was, however, very active—namely, as an examiner. In the Royal College of Surgeons of England he was examiner in surgery for the Conjoint Board and held this office up to the time of his death. Indeed, he was examining during the last week of his life. He was also examiner in surgery for five years in the University of London.

Anderson was interested in the history of surgery and especially in the application of fine art to its illustration. He wrote a paper, excellently illustrated, on "Art in Relation to Medical Science" in the fifteenth volume of the St. Thomas's Hospital Reports, which is the best sketch of that subject accessible in the English language. An interesting lecture on the "History of Surgery since the Middle Ages" in the eighteenth volume of the same Reports should also be mentioned. His strictly surgical papers were not very numerous, but he published in 1896 a work on Deformities of the Fingers and Toes and contributed three articles to "Heath's Dictionary of Surgery." He wrote also the section on the Genito-Urinary Organs in "Morris's Treatise on Anatomy," and contributed several surgical papers to the St. Thomas's Hospital Reports, THE LANCET, *British Medical Journal*, &c. In the "Nomenclature of Diseases," published by the Royal College of Physicians of London in 1896, he wrote, in conjunction with Mr. Shattock, the section on Malformations, a laborious and recondite piece of work.

No account of Anderson's career would be complete without reference to his work in connexion with the fine arts. When he was appointed, in succession to the late Professor Marshall, professor of anatomy to the Royal Academy it was generally recognised that by his knowledge of art and anatomy alike he was a worthy successor of the eminent men who have filled that chair. But it was chiefly in connexion with Japanese art that his name was known. When the greater part of his collection of Japanese pictures and drawings was bought for the British Museum and exhibited in the gallery of the Print Department it attracted general attention among connoisseurs, both English and continental. The general judgment was that, even if some more brilliant and costly specimens might be found elsewhere, no collection so important historically had ever been brought together in Europe, and possibly not even in Japan itself. His "Descriptive and Historical Catalogue" became an authority on the subject. Anderson was still better known by his splendid work on "The Pictorial Arts of Japan," in two folio volumes, published in 1886. He also wrote a monograph on "Japanese Wood Engraving" in 1895. Anderson kept up his interest in Japanese matters other than artistic and was one of the most active founders of "The Japan Society," of which he was at one time president. He was well known to, and highly esteemed by, the Japanese colony in London, and received from the Japanese Government the distinction of "Commander of the Order of the Rising Sun."

In the various circles in which he moved, medical, artistic, and Japanese, Anderson's wide knowledge, unaffected geniality, and modesty made him an attractive personality, but naturally of a retiring disposition he did not go much into society. In all professional relations he was esteemed for his sincerity and thoroughness and for the strict conscientiousness with which he fulfilled all duties devolving upon him. Whether in the dissecting-room or in a tedious examination, or in going through a long list of operations, he never allowed himself to be tired till the work was done. Of late years he found the labour of examinations, together with



WILLIAM ANDERSON, F.R.C.S. ENG.,

SURGEON TO ST. THOMAS'S HOSPITAL; PROFESSOR OF ANATOMY TO THE ROYAL ACADEMY OF ARTS.

the ever-increasing amount of operative work now expected of hospital surgeons, press somewhat hardly upon him. But he suffered from no serious illness since an attack of enteric fever some years ago. During the last week of his life he complained of severe dyspeptic troubles, such as he had suffered from before, but there was nothing to prepare his friends for the lamentably sudden termination of his life. On the morning of Oct. 27th he described himself to one of his colleagues as better, but still complained of indigestion. In the afternoon he went for a drive and while in his carriage was seized with sudden and alarming syncope, and though able to reach home he rapidly sank. The cause was found to be a rare and unlooked-for accident, rupture of a cord of the mitral valve, without any other morbid condition of the heart or other organs.

His funeral on Oct. 31st was attended by the Treasurer and many members of the staff of St. Thomas's Hospital, representatives of the Royal College of Surgeons of England, of the Japan Society, and by numerous private friends. Thus passed away a man of singularly sweet nature, of perfect integrity, and of great attainments, whose loss will be felt, not only in his own hospital, but in the surgical profession of London and elsewhere. Anderson was twice married—first to Miss Margaret Hall, who accompanied him to Japan, and by whom he has left a son and a daughter; and, secondly, to Louisa, daughter of the late Mr. F. W. Tetley, of Leeds, who survives him.

Our portrait is a reproduction of a photograph by Mr. C. T. Dent.

Mr. R. Clement Lucas sends us the following tribute to Mr. Anderson's memory:—

"I cannot refrain from writing a few lines in appreciation of one whom I held in the highest esteem. There are men whom we respect but who do not touch our hearts; men whom we admire who scarcely command even our respect; and men whom the world calls great who fail to raise in us the slightest sense of admiration. Yet another, on whom, perhaps, the world smiles less kindly, catches at once our sympathy, and in a moment we feel instinctively that we are in the presence of a friend. Such was the feeling inspired in me when I first met William Anderson. And on what did this personal fascination depend? The rough pioneers who hack and hew their way into notoriety are not of this mould, nor are the laborious compilers of many volumes of ill-assorted word-heaps, nor the still more to be pitied collectors of endless figures they call statistics—all useful men, but all uninteresting. It was Anderson's great good fortune to be always interesting. To the mass of humanity a dead wood-pigeon represents so many feathers towards a pillow and so much flesh for dinner, but to Anderson, whose gentle spirit had been fired by the light of genius, those iridescent plumes reflected beauty, those coral feet drawn to the grey bosom taught harmony in colour, and the half-opened bill and dimmed and up-turned eye revealed the struggle of the fleeting spirit. He was in sympathy with the beauties of Nature and his eye saw not form merely but the contour of a thought, and his ear heard not sound merely but the cadence of music Where Art reflected Nature truly there Anderson's mind found rest and pleasure. Schooled to science his thoughts gravitated always in the direction of art, so that all felt when he was elected Professor of Anatomy to the Royal Academy of Arts that no better selection could have been made. His long sojourn in Japan made a lasting impression on him and his collection of Japanese art treasures became renowned and was purchased for the nation. His love of art and beauty we find reflected in his writings, and anything abnormal, unsymmetrical, or ugly caused in him a feeling of distress and a desire to remedy it. So we find him editing Brücke's 'Beauties and Defects of the Human Figure' and publishing a small work on 'Deformities of the Fingers and Toes.' I remember once when a very handsome but ignorant student appeared before him at an examination he drew the attention of his colleagues to this Apollo, and, as he did his duty, with a sigh said, 'Some woman has spoilt him.' On another occasion when discussing a gentleman little favoured by nature he said, 'His ugly face has soured his life and spoilt his manners; I should like to try the effect of a wig and a beard.' Thus to Anderson's æsthetic eye all ugliness excited pity and his imagination rose to suggest a remedy. Though neither of commanding height nor of stalwart figure Anderson had a very distinguished appearance. Only within the last three weeks I was strolling down Wimpole-street with a friend when we met Anderson walking on the other side of the road. 'Who is that very handsome man?' inquired my friend. 'He has a very distinguished and somewhat foreign look.' This was how Anderson struck a perfect stranger. His somewhat prematurely whitened hair, worn rather long, and his full white moustache, contrasted with his darker eyes and brows. Sensitive and retiring in disposition he nevertheless had a most courteous manner and a winning smile. Not only by his own hospital and by her southern sister will his loss be mourned, but by many friends widely scattered who have known and appreciated his worth. Our profession, so rich in men of surpassing industry, so full of men of mechanical genius, abounding, too, happily, in men of great self-denial and benevolence, but bare—how sadly bare—of men who can with professional distinction carry with them an atmosphere of literary refinement and a true appreciation of beauty in Nature and Art can ill spare a man of Anderson's wide sympathies and will long feel the shock which his sudden death has caused."

ALFRED WILLIAM HUGHES, M.B., C.M., F.R.C.S. EDIN., F.R.C.S. ENG.,

PROFESSOR OF ANATOMY, KING'S COLLEGE, LONDON.

THE war in South Africa has occasioned many deaths in the medical profession, and the Welsh Hospital in particular has to mourn the loss of no less than five out of the staff of 23, a proportion greater than that ordinarily experienced in the fighting line. The death of Professor Hughes is peculiarly sad, since he had carried through with complete success the work which he had undertaken, and was already on his way home before the first symptoms of typhoid fever developed. Some of those associated with him had thought that he was not in his usual health for two or three days before leaving Pretoria, while to others his unflagging cheerfulness masked the insidious onset of the disease. Shortly after starting his temperature was found to be raised, but the chart kept during a bad passage showed no abnormal severity of fever. On reaching home, however, his restlessness, delirium, and feeble pulse caused much anxiety, which was later increased by thrombosis of the femoral vein. Although the obstruction to the circulation was comparatively slight the rapid feeble action of the heart persisted and signs of engorgement of the lung developed. The end came a fortnight after landing at Southampton, and apparently on the twenty-seventh or twenty-eighth day of the fever. During his illness after his return he was attended continuously by Dr. Nestor Tirard and by Dr. Frederick T. Roberts.

Professor Hughes was born at Fronwen, Merionethshire, and was the son of Mr. Robert Hughes of that place. He was educated mainly in Edinburgh, but he also studied in London and in Leipsic. While he was an undergraduate at Edinburgh he gained a medal in anatomy and was junior demonstrator in anatomy and in physiology. After graduation in 1885 he became in 1889 a Fellow of the Royal College of Surgeons of Edinburgh, and two years later he became a Fellow of the Royal College of Surgeons of England. For a short time after graduation he was engaged in private practice at Flint, but he gladly availed himself of an opportunity of returning to Edinburgh to resume work as an anatomist, at first as a senior demonstrator and afterwards as a lecturer. At this time his writings and researches were numerous and important and he established a reputation as a teacher which led to his election to the chair of anatomy at University College, Cardiff. Here his teaching was facilitated by his large private collection of anatomical preparations and the number of entries of students soon increased. Owing to the continued illness of his wife he was compelled to remove from Cardiff after four years of successful work and he was then elected professor of anatomy at King's College, London. Here he speedily won friends and became dean of the medical school, in which capacity he represented the interests of King's College upon numerous committees. He was peculiarly adapted to public life, and at one time he was a candidate for Parliamentary honours. He had the instinct of the true sportsman which led him safely through difficulties, gaining friends even amongst those whose opinions might be at variance with his own, and part of the secret of his success appeared to lie in the invariable geniality and courtesy which never allowed him to say an unkind word of anyone. It is needless to say that with students he was deservedly popular; not only were his teaching powers appreciated by them, but they also recognised in him one who

could be counted upon to give them his sympathy and assistance in all their interests, and he accordingly figured frequently as chairman at concerts, sports, and dinners. Some of his colleagues and many of the students having gone in a surgical capacity to South Africa, Professor Hughes threw himself heart and soul into raising a fund for a Welsh military hospital. He was successful in collecting over £12,000, and the hospital was duly equipped and sent out in the middle of April. Within a few weeks, however, several of the staff died and Professor Hughes immediately volunteered to go out to assist in the work. In South Africa, as in England, his magnetic influence soon made itself felt, and the Welsh Hospital was so much appreciated that it was taken to Pretoria at the request of Lord Roberts. Professor Hughes has, since his return, received a further compliment to his successful organisation. Lord Roberts having sent a request that the Welsh Hospital might continue in work for another three months.

From the foregoing sketch of the more recent events in a life of stirring activity it must not be inferred that the progress of science was neglected. Professor Hughes has made numerous and valuable contributions to the advancement of the science of anatomy, and before he became engrossed in the interests of the Welsh Hospital he had been busily engaged upon a new book on anatomy which was nearly completed. In one sense his work is done, but he has left behind him an example of energy, of devotion to work and of interest in the well-being of students and of all who came within his sphere of influence, which will long continue to serve as a stimulus to all who have been privileged to know him.

We have received the following appreciatory remarks from the Chairman of the Welsh Hospital:—

Few persons are aware of the debt which the Welsh Hospital owes to Professor Hughes. Although several civil hospitals had been equipped and sent out to South Africa there was still need of more hospital accommodation; and in March Professor Hughes decided to send out a Welsh hospital. He gathered around him a few friends who supported him and, what was of far greater value, a number of ladies who worked admirably and successfully in furthering his efforts to collect funds and obtain hospital furniture and equipment, but the mass of the work fell on Professor Hughes. It was at a time when the country had liberally responded to large demands upon its benevolence in the cause of the war and when the prospect of success in obtaining the necessary funds was not of a cheering kind, but Professor Hughes's untiring energy, hopeful disposition, buoyancy of spirits, and enthusiasm drove away any doubts or misgivings about the ultimate result. In April the hospital was successfully equipped and sent out. On landing the staff was ordered to Bloemfontein to help to cope with the outbreak of typhoid fever which had broken out there after the battle of Paardeberg. They obeyed but suffered severely, for several of them died within five weeks of their arrival in South Africa. At this crisis Professor Hughes, who, as secretary and organiser, had worked with untiring zeal in the cause of the hospital, offered to go out to South Africa to undertake its management and to relieve the staff of all care and anxiety respecting the non-medical affairs of the institution. The committee accepted his generous and noble offer and within 48 hours he was steaming for Cape Town on his way to Springfontein where he remained until the hospital was removed to Pretoria. Under his management the hospital became such as to command general admiration from Springfontein to Pretoria. In September he received an intimation that the hospital would not be required as a medical and surgical hospital after the end of the month, but that Lord Roberts wished it to remain until Nov. 17th as a convalescent hospital. He made complete arrangements to carry it on in accordance with the Field Marshal's wishes and left Cape Town on Oct. 3rd, reaching home on the 19th to die for the Welsh Hospital.

DAVID YOUNG, M.D., M.S. ABERD., L.R.C.P., L.R.C.S. EDIN.

THE death of Dr. David Young, at the age of 61 years, which occurred on Oct. 18th at Ventnor, in the Isle of Wight, has already been announced in our columns. Dr. Young received his professional education in Edinburgh and at the University of Aberdeen, where he graduated as B.A. and as M.S. in 1865, taking the degree of Doctor of Medicine in 1869. He became a Licentiate of the Royal College of Physicians and of the Royal College of Surgeons of Edinburgh in 1865. He made a special study of botany at the beginning of his medical career and in 1867 was appointed professor of botany in the Grant Medical College, Bombay. He also held a teaching appointment in the University of Bombay in obstetric medicine, but finding the climate of India very trying to his health he resigned these appointments and went to live at Florence, whence 10 years later—i.e., in 1882—he removed to Rome, where he continued to reside until quite recently when he retired to the Isle of Wight. When Dr. Young took up his residence in Italy there was scarcely a place in that country known to foreigners as a suitable health-resort during the summer months. Dr. Young visited the higher Apennines and other parts of Italy with a view to discover some place where invalids might pass the summer and he embodied the results of these observations in a book entitled "Rome in Winter and the Tuscan Hills in Summer." By this work, the gist of which appeared as a series of articles in the *Practitioner*, he did much to popularise Italy as a health-resort for English and American invalids.

Dr. Young was exceedingly popular among his patients and the following tribute to his merits from one of them shows why this was the case. "Dr. Young of Rome," writes an old friend, a layman, "was thorough. His patients came from everywhere, but whether they came once or for 'repairs' your individual case was for the moment the 'hobby,' and with soft sympathetic voice, gentle but firm persistency, he would dig through symptoms to the root of the matter. Many things combined to make Dr. Young an ideal continental practitioner. He had a charming personality, a fund of dry humour, a gift for languages, and was a wide reader and a travelled man who had seen and observed. But undoubtedly the chief factor in his success was his unusual powers of concentration upon the case before him. Adaptation of particular means to a particular end found a ready exponent in the old Piazza d'Spagna and the Via Venti Settembre. Dr. Young was wont to say that one of the greatest advantages and privileges of his early life had been to come under the favourable notice of Sir James Simpson. To him he owed not only example and precept, but his first professional appointment as surgeon to one of the preliminary search parties after the remains of Sir John Franklin and subsequently his connexion with the Grant Medical College, Bombay, which furnished experience peculiarly valuable to an Anglo-Italian medico. Invalided by a severe attack of dysentery in 1871, Dr. Young, almost by accident, settled in Florence until in 1882 he removed to Rome. Owing to the shortness of the season practice when it comes at all in the capital of Italy comes all at once, and for some few years the Embassy, under Sir Clare Ford, had been added to already too heavy and responsible work. In 1897, unmistakeable warning in the form of heart trouble suggested retirement. He fixed upon Ventnor as a haven of rest and passed the short time that remained happy among his flowers, full of interest to the last in works of charity and benevolence. By a coincidence, hard by his grave is the tomb of the late Professor Wharton Jones, who re-wrote the last edition of Sir James Clark's work on the climate of Rome—the only treatise on the subject until 1886 when Dr. Young published his 'Rome in Winter and the Tuscan Hills in Summer.' Any notice of Dr. Young would be inadequate if no allusion were made to his strong and deep religious convictions, his labours on behalf of the now demolished 'Ghetto,' or his self-forgetfulness and professional modesty. Reputation, honour, and esteem, indeed came, but they came from what he was and wrought, and came unsought."

JOHN TILSLEY, L.R.C.P. LOND., M.R.C.S. ENG.

MR. JOHN TILSLEY died at the residence of his father, George-street, Bath, on Oct. 28th, from dysentery, in his thirty-second year. The deceased received his medical education at University College, Bristol, and took several prizes and scholarships. He qualified L.R.C.P. Lond. and M.R.C.S. Eng. in 1894, and after holding resident appointments at the Bristol General Hospital proceeded as a medical missionary to Kiu-Kiang, China. On the outbreak of the recent disturbances there he was

ALFRED WILLIAM HUGHES, F.R.C.S. ENG.,
PROFESSOR OF ANATOMY, KING'S COLLEGE, LONDON.

warned to leave by the British Consul and consequently with his wife and child he started for England. They had to leave practically without taking anything with them except the clothes which they were wearing at the time. At Shanghai Mr. and Mrs. Tilsley both contracted fever and on recovery proceeded on their journey. At Colombo, however, Mr. Tilsley unfortunately contracted dysentery, but, rallying, he continued the voyage. After leaving Genoa he had a relapse, but arrived at Southampton on Oct. 27th and on the following day he died. Great sympathy is felt in Bath for the parents and widow, and the funeral, which took place at Locksbrook on Oct. 31st, was very largely attended.

THE LONDON COUNTY COUNCIL AND THE METROPOLITAN WATER-SUPPLY.

THE Water Committee of the London County Council have recently given in their report as to the course which they recommend should be pursued by the Council during the present session. The report is dated Oct. 26th, 1900. It is divided into two parts, of which the first deals with the orders made by the Local Government Board under the Metropolis Water Act, 1899, and the second with the legislation which the committee advise the Council to undertake in regard to the purchase of the Metropolitan Water Companies' undertakings.

The Metropolis Water Act, 1899, it may be remembered, provided for intercommunication between the mains of the metropolitan water companies. The Bill was brought in by the Government on the recommendation of the first report issued by the Llandaff Commission. The measure was an urgent one in view of the possibility of another water-famine in East London, and on that ground it had the support of THE LANCET, although, as we pointed out at the time, the financial arrangements for raising the necessary money would have been improved had an amendment introduced in the House of Lords been allowed to stand when the Bill was returned to the House of Commons. Under the provisions of the Act as it was finally passed any metropolitan company may, with the consent of the Local Government Board, raise the money required for the construction of the works necessary for the intercommunication of mains and the money may be raised by the issue of debenture stock. It is contrary to the custom of the Local Government Board to give information as to stock raised by their authorisation. In reply to a letter written on behalf of the London County Council, asking for particulars with regard to the debenture stock raised, the Local Government Board declined to give any information. This rebuff has, perhaps, displeased the Water Committee of the London County Council, who recommend:—

> That it be referred to the Parliamentary Committee to consider the desirability of seeking powers to entitle the Council to obtain copies of all orders made by the Local Government Board under the Metropolis Water Act, 1899, with regard to the London water companies.

This recommendation presumably means that the Parliamentary Committee of the London County Council are to consider the advisability of promoting a Bill in Parliament to enable the Council to obtain statutory control over the actions of a Government department.

In the second part of their report the Water Committee advise the Council to provide a Bill for the purchase of the metropolitan companies' undertakings by the Council. The recommendations are as follows:—

> (a) That a Bill be promoted in the session of 1901 for the purchase by the Council of the undertakings of the eight metropolitan water companies.
> (b) That it be referred to the Parliamentary Committee to prepare and present to the Council the necessary Bill for carrying out the above recommendation, and also the necessary Water (Finance) Bill.

"If a second reading is refused," say the committee, "we are advised that the expense up to that stage will not exceed £200."

DIPHTHERIA AT NEWBRIDGE.—Over 60 cases of diphtheria have been recently notified in the Newbridge area of the Abercarn District Council and the authorities have again decided to close the board schools, which were only lately re-opened after having been closed for the same cause.

THE WAR IN SOUTH AFRICA.

FOR more than a year past the war in South Africa has tended to dwarf all other subjects and the state of affairs in that country still holds a prominent place in the public mind. The literature on the subject is already sufficient to fill a small library and it does not yet seem to be coming to an end. Among the most recent and notable publications two are by members of the medical profession—Dr. Conan Doyle and Mr. Frederick Treves—and the third is by Captain Mahan of the United States Navy.

The Royal Commission on the hospitals in South Africa has brought its investigations to a conclusion and made its exit to consider its report in the pelting shower of words with which Mrs. Richard Chamberlain brought her very voluble testimony to an end.

There has of late been a good deal of stormy weather, hard marching, and hard but desultory fighting in South Africa. This is only to be expected, however disappointing, under the circumstances, but it is plain that Lord Roberts considers that with the departure of Mr. Kruger, the occupation and annexation of the Transvaal, and the dispersion and disorganisation of the Boer forces the war is, officially speaking, over; otherwise so many of the British generals and troops, colonial and otherwise, would not be taking their departure from the Cape. Although all arrangements have been made for Lord Kitchener's assuming supreme command in South Africa the departure of Lord Roberts has been postponed. This is partly owing, no doubt, to the unsettled state of military affairs, but mainly, we deeply regret to say, to the illness of his elder daughter, who is reported to be suffering from an attack of enteric fever. The Field Marshal has exhibited such a sense of duty and patriotic spirit under circumstances which would have tried the fortitude of the stoutest heart that the news of any addition to his burden of anxieties has been received with much sympathetic regret. The public letter which Lord Roberts has addressed to the press is strongly indicative of his character and of the reasons for his great popularity among all classes. It is no wonder that an army under his command may be always confidently relied upon. He praises his troops without stint and in terms that go home to them and the nation, and, what is far better, the praise is allowed on all hands to be merited. It is a new thing for a victorious general in his despatches to speak of his soldiers as "my gallant comrades" and to declare of them that "they bore themselves like heroes on the battlefield and like gentlemen on all other occasions." There is the ring of true metal, too, in his appeal to the British public to refrain from tempting them, by inconsiderate and ill-advised proffers of welcome and hospitality, to forget the splendid reputation which they have won for the Imperial Army. Lord Roberts's appeal is very welcome to us, seeing that THE LANCET had already called attention to the subject.

Reverting to the subject of the most recent publications about the war we may particularise Dr. Conan Doyle's story of "The Great Boer War," and also the small and less ambitious "Tale of a Field Hospital," by Mr. Frederick Treves, as well worth reading. While the latter has a special interest to the medical profession and to organisations for the relief of suffering, it is sure to claim attention on the part of readers altogether outside the profession on account of the clear, vivid, and often pathetic descriptive touches and incidents which it contains.

At the opening of the session of the Roentgen Society in Hanover-square on Nov. 1st, the President, Dr. J. B. Macintyre of Glasgow, delivered an address in which he went into the question of the employment of the x rays in war. It is too recent to say anything yet about the work in South Africa generally. Meanwhile Dr. Macintyre was able to report, on the authority of the Director-General of the Army Medical Service, that the x rays were found most useful in the hospitals at the base and on the line of communication, although not actually on the field. There is now a regulation list of x ray apparatus for army work; 17 sets of these were sent to South Africa and they are now being adopted in and supplied to all the larger military hospitals. Many reasons may be assigned as the cause of the x rays not being actually useful within or near the fighting lines; but should surgeons from

the Transvaal who have employed the apparatus indicate that, either for reasons of portability or owing to defects they were unable to use them in some instances where they might have been advantageously employed, there is little doubt that the majority of all such difficulties will by patient labour and preparation be avoided in the future.

Speaking generally, we may say that critics of the military and medical operations in South Africa have not, we think, sufficiently kept in mind that the troops were fighting some 7000 miles from home and over an area of 160,000 square miles of territory.

In the War Office return issued on Nov. 2nd, showing the total reduction of the field force in South Africa, we find that up to, and including, October, there were 391 officers and 3795 men killed in action or died from their wounds, and that 155 officers and 6115 men died from disease out of a total of 10,698 deaths. Some 1422 officers and 33,077 men have been sent home as invalids, and among the latter only 1030 have left the service as unfit. These figures do not include those missing and prisoners or those who died in captivity or as invalids since leaving South Africa

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We have received the following appeal from Lord Roberts, to which we refer in another column.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me, through the medium of your paper, to make an appeal to my countrymen and women upon a subject I have very much at heart and which has been occupying my thoughts for some time past.

All classes in the United Kingdom have shown such a keen interest in the army serving in South Africa, and have been so munificent in their efforts to supply every need of that army, that I feel sure they must be eagerly looking forward to its return, and to giving our brave soldiers and sailors the hearty welcome they so well deserve when they get back to their native land.

It is about the character of this welcome and the effect it may have on the reputations of the troops whom I have been so proud to command that I am anxious and that I venture to express an opinion. My sincere hope is that the welcome may not take the form of "treating" the men to stimulants in public-houses or in the streets, and thus lead them into excesses which must tend to degrade those whom the nation delights to honour and to lower the "soldier of the Queen" in the eyes of the world—that world which has watched with undisguised admiration the grand work they have performed for their sovereign and their country.

From the very kindness of their hearts, their innate politeness, and their gratitude for the welcome accorded them, it will be difficult for the men to refuse what is offered to them by their too generous friends. I therefore beg earnestly that the British public will refrain from tempting my gallant comrades, but will rather aid them to uphold the splendid reputation they have won for the Imperial army.

I am very proud that I am able to record with the most absolute truth that the conduct of this army from first to last has been exemplary. Not one single case of serious crime has been brought to my notice—indeed, nothing that deserves the name of *crime*. There has been no necessity for appeals or orders to the men to behave properly. I have trusted implicity to their own soldierly feeling and good sense, and I have not trusted in vain. They bore themselves like heroes on the battlefield and like gentlemen on all other occasions.

Most malicious falsehoods were spread abroad by the authorities in the Orange Free State and the Transvaal as to the brutality of Great Britain's soldiers, and as to the manner in which the women and children might expect to be treated. We found on first entering towns and villages doors closed and shops shut up, while only English-born people were to be seen in the streets. But very shortly all this was changed. Doors were left open, shutters were taken down, and people of all nationalities moved freely about, in the full assurance that they had nothing to fear from "the man in khaki," no matter how battered and war-stained his appearance. This testimony will, I feel sure, be very gratifying to the people of Great Britain, and of that Greater Britain whose sons have shared to the fullest extent in the suffering as well as the glory of the war, and who have helped so materially to bring it to a successful close.

I know how keen my fellow-subjects will be to show their appreciation of the upright and honourable bearing as well as the gallantry of our sailors and soldiers, and I would entreat them, in return for all these grand men have done for them, to abstain from any action that might bring the smallest discredit upon those who have so worthily upheld the credit of their country.

I am induced to make this appeal from having read, with great regret, that when our troops were leaving England and passing through the streets of London their injudicious friends pressed liquor upon them and shoved bottles of spirits into their hands and pockets—a mode of "speeding the parting" friend which resulted in some very distressing and discreditable scenes. I fervently hope there may be no such scenes to mar the brightness of the welcome home.

I remain, Sirs, yours faithfully,

ROBERTS, F.M.

Headquarters of the Army in South Africa, Pretoria, Sept. 30th, 1900

THE SIEGE OF MAFEKING FROM A MEDICAL POINT OF VIEW.

BY W. A. HAYES, M.R.C.S. ENG., L.R.C.P. LOND.,

PRINCIPAL MEDICAL OFFICER (BASE) DURING THE SIEGE; RAILWAY MEDICAL OFFICER (C.G.R.); SURGEON-LIEUTENANT, BECHUANALAND RIFLES.

IT was my intention some time ago to have given the readers of THE LANCET a slight sketch of the siege of Mafeking, but as I left that town immediately after the siege was raised with the column that went to the Transvaal and only returned a short time ago I could not manage it. The following may be of interest, however, to your readers, not so much from a scientific point of view as from a working one.

In August, 1899, I was in England on business, and knowing that war was a certainty I hurried back to Mafeking, arriving late in September. On my return I endeavoured, through the railway medical board in Buluwayo, to obtain as much in the way of surgical dressings as I could. Unfortunately, the order given was never executed, the time available being too short before the Boers declared war and cut us off both north and south. Major L. E. Anderson, of the Protectorate Regiment, was at that time stationed at Ramathlabama, in the Bechuanaland Protectorate, the Cape Government, for some reason best known to themselves, having refused to allow the force to remain here in Colonial territory. He also endeavoured to obtain supplies of various sorts from Cape Town, but failed. In his case, however, I believe there was no excuse, for the military authorities had large supplies there. As soon as Mafeking was invested by the enemy (at that time numbering about 6500) it was wonderful the way in which dressings, antiseptics, &c., appeared. A few packets of wool here, a bundle of bandages there—in fact, all we wanted turned up in all sorts of funny ways, and in a short time we had a decent collection.

Early in October, by order of the town commandant, I organised a number of dressing stations and appointed ladies to take charge of them. There were four of these stations with a Red Cross flag over each. Cronje, however, sent in word that he objected to the number of these flags flying in the town, so by the order of "the colonel" (Baden-Powell) I removed all but two. The enemy were informed where these two stations were, and where the hospital was, and also that the Convent was going to be used as a convalescent home. As, however, Cronje, and afterwards Snyman, were intent, not on shelling the forts but on merely sitting down round the place and trying to smash up the buildings in the town, including the hospital, the women's laager, and the Convent, and pumping shells and bullets promiscuously into the town, we did away with all Red Cross flags except those at the hospital and the Convent. At both of these places they were of no use as a protection against shell- and rifle-fire, but rather drew it, especially when Snyman was in command. During his *régime* the Convent was daily shelled so that we could only use the two south rooms for patients. No nurse or anyone else dared to appear outside the hospital or Convent without a volley being fired at them. Several patients were wounded on the hospital stoep. Those whose duty brought them to the Kaffir ward ran the greatest dangers. On one occasion Major Anderson and I were examining a patient there close to the open door when a volley was fired at us from about 1500 yards. Several of the bullets entered the ward, one

passing between us and burying itself in the wall. The sniping at the hospital got so bad at last that sandbags had to be put up all round the place. I take this opportunity of stating that on no single occasion when an ambulance wagon, accompanied by a Red Cross flag, moved about inside our lines did it escape both wilful shelling and rifle-fire, and on many occasions the Boers used their 15-lb. high-velocity gun and their "pom-pom" for this purpose.

At the commencement of hostilities the number of medical men in Mafeking was six. Unfortunately, Mr. Holmden of the British South Africa Police was ill and continued so for the greater part of the siege, so that he could do but very little. Mr. Elmes joined the ranks of the Bechuanaland Rifles. The part played by Mr. Sidney Smyth is explained by the orders of the day dated Nov. 5th, 1899. Without going into further detail, therefore, I may say that the available number of qualified men was three—namely, Major L. E. Anderson, Mr. T. W. Hayes, and myself. The trained nursing staff at the hospital consisted of Miss K. G. Hill (Adelaide Hospital, Dublin), the matron (Miss J. Gamble), Mrs. Parminter, Mrs. McCallum, Miss Cramer, and Miss Sheasby (a probationer). The following ladies also gave their help when required—namely, the Sisters of Mercy under Mother Theresa, Mrs. Stuart, Mrs. Girdwood, Mrs. Adams, Miss Wyatt, and Miss Friend. At the convalescent home which varied in its situation from time to time—the site having to be constantly changed on account of the enemy's shelling—the work was done all through the siege by Mrs. More, Mrs. Gemmell, and Mrs. Hayes. At first the Railway Institute was used as the hospital, but the enemy completely destroyed it one afternoon with a 94-lb. shell which burst on the billiard-table. Both this hospital and the Convent were particularly dangerous on account of the shell-fire and also from the constant sniping that went on at the nurses going and coming to the place. When the bush had been cut down to a large extent for firewood all round the town we had to stop the ladies going to the Convent as it was too dangerous. One lady had five shots sent at her when going along on her bicycle. The sergeants' mess at the camp of the British South Africa Police was used as a hospital for the women's laager and Miss Crawford was placed in charge. On May 12th the enemy took possession of the fort and all the buildings. They brought their wounded to the hospital. Mrs. Buchan was there with her sister (Miss Crawford) assisting her. As several of the Boers were dying from wounds Mrs. Buchan came up to my house in the railway camp, a distance of 900 yards, under a heavy cross-fire to get me to go down with her to their assistance. As we did not ask the enemy to come there and as I personally had very little sympathy for people who had all along broken every rule of civilised warfare and sent their heavy shells into both of our hospitals, I at first thought the best thing was to leave them alone. However, as Mrs. Buchan would not remain away from her sister I returned with her. The fire was extremely warm on the way there. I amputated an arm and a leg for a couple of the enemy who were *in extremis* and after some time returned, bringing with me one of our men, a man of the Cape Police, who had been sent to the fort before it was known that the enemy were there and who was badly wounded. The journey there and back was not a pleasant one. Neither of the two ladies in the hospital had the least idea of the dangerous position which they were in—not from the Boers so much as from the cross-fire to which the building was subjected the whole day and which could not be avoided. All through the siege every lady in Mafeking engaged in nursing the sick worked under conditions such as I hope no woman will ever have to live or work under again. Ill-fed (but with the best we could give them) and hard-worked, in constant danger from shell and bullet, their true British pluck came out. No order given was disobeyed, month after month was passed in the terrible heat and when we were constantly being disappointed by rumours of relief being close at hand, but no murmur was ever heard. Every day women unaccustomed to such work or to the sights incident on war braced themselves together and held bleeding and mangled limbs whilst myself or my colleagues operated. I am afraid that the public have heard very little of those ladies who did the really hard and dangerous work in attending the sick and wounded during the siege. Like all true nurses they are satisfied with the thanks of their grateful patients and prefer not to see themselves figuring as heroines in the daily prints.

To give details of all the interesting cases would take too much space, so I will only give brief notes of a few of the most striking.

Perhaps the most interesting case was that of one of the men in the railway division who was washing one evening after returning from his duties in the trenches. He suddenly, as he describes it, "got knocked silly by a tremendous blow on the head." A Mauser bullet had entered the left side of his skull and had made an exit through the right side in a line as near as possible in the centre of each inferior frontal convolution measuring from before backwards. When he was brought to the hospital he assisted to remove his clothing and answered questions and spoke quite rationally both then and at various times during the night, though he slept rather uneasily. On the next morning when I saw him he had no recollection of all that had happened to him from the time he had felt the blow of the bullet to the moment I spoke to him. He had a severe headache which lasted for a week. Diplopia, which was well marked at first but gradually diminished, lasted for 10 days, at the end of which time he was quite well and his wounds had healed.

Another interesting case was that of a man of the Cape Police. He was injured by a Mauser bullet which entered the body at the level of the junction of the sixth rib and the costal cartilage about two inches to the outer side. After having passed through the liver it must have gone through the right kidney and then through the muscles and integuments of the back, making its wound of exit just above the posterior superior iliac spine. He complained of very severe pain in the right knee and on the inner aspect of the thigh, which lasted for 34 hours, but hardly any abdominal pain was present. There were no lung symptoms. Hæmaturia was well marked for two days and then disappeared. On the third day the patient was to all intents and purposes well. We kept him in bed for a week, greatly against his will, as he was anxious to return to duty and "wipe out the insult."

The following case of a native is also interesting. A "pom-pom" shell came through the wall of the hut in which he was sitting and exploded. A piece of the shell struck him, but so slight was the pain caused by the blow that he was not quite sure "if it had gone in." There was a small wound in the flank, and from that a contused line led downwards, in the middle of which was a lump such as would be caused by a blow. A probe would not pass beyond this point on the first day. Two days after on account of the appearance of pus at the lower wound I probed again, when suddenly the probe slipped along and struck metal, and I sent for Major Anderson to have a look at the patient with me. We decided to cut down on the end of the probe and we did so. I made an opening large enough to pass my little finger, and at once recognised the point of a "pom-pom" shell. Nearly half of the shell, must, after having passed the lower opening, grooved the brim of the pelvis, then turned downwards and inwards along the outer surface of the ilium and afterwards turned directly upwards and outwards. Having enlarged the wound I made a hook on the end of the probe and, passing it into the powder chamber of the shell by steady pulling and enlarging the wound, got it out. It was remarkable that the probe would not pass with ease the first time considering the size of the wound. The fact that the point of the shell was pointing outwards was a thing we constantly noticed with bullets. They were nearly always found where they were lying under the skin opposite the wound of entrance in a position pointing towards that wound. During the removal of the fragment of shell the patient was not under an anæsthetic. He apologised to me afterwards for making so much noise during the operation; as a matter of fact he had only given one or two grunts. On May 10th or 11th the patient went out of hospital and arranged a looting tour through the Transvaal. He and his party got ambushed, however, too close to a Maxim and suffered the penalty.

Amputation we found to give the best results from a surgical point of view. In spite of the want of proper dressings towards the end of the siege and the overcrowded state of the hospital, we never had a wound which became septic. Two cases of gangrene occurred but they were the consequence of the tremendous injuries inflicted, not from failure of antiseptics. The hospital, constructed for 47 patients, always had from 50 to 70 and more often 100.

Of wounds those from the Mauser and Mannlicher bullets, which are indistinguishable, did best. We had many cases in which the bullets had passed through joints, which all did well, and after healing regained good movement under massage and calisthenics. We had some few cases in which bones had been drilled perfectly cleanly,

with no splintering or fracturing accompanying. The Lee-Metford bullet gives more trouble, but, speaking generally, inflicts an easily treated and clean wound. The Martini bullet gives an ugly wound and when it strikes bone does great damage. The enemy used the true explosive bullet as well. We had from time to time several cases which we suspected to be due to explosive bullets, and at last we got one where a bullet, exploding in the loophole, tatooed a man's face with powder and peppered him with lead. Major Anderson attended the man on admission to hospital. I afterwards saw him with Major Anderson and there was no shadow of doubt about it. Mauser, Lee-Metford, and Martini expanding bullets (soft-nosed) were used constantly. Shell-wounds were the most troublesome wounds, even when they were very slight. Of two cases of enterostomy we performed for shell-wounds one recovered. In each case the abdominal wall was badly damaged. Bullet-wounds of the abdomen we left alone and treated by opium and feeding. These patients all died. In spite of opinions expressed by high authorities and mule flesh is most indigestible and unsatisfying, especially when almost skin and bone. A brawn made of the skins of these animals with scrapings of the heads and bones highly flavoured with spices was absolute filth, but nevertheless was sold rapidly by the military authorities at 1s. per pound, and was eagerly eaten by the defenders as a means of "filling up the cracks" in a half-ration diet. Constant watching—and there were none who did not watch to a large extent—and short rations, however, were bound to tell on us sooner or later. We could defend our town, but I feel quite certain that to march three miles and fight could never have been done at any time after the middle of February. It was remarkable how little time it took to get the defending force fit to march when full rations were dealt out, which I ascribe to the removal of anxiety as much as anything else. We knew what our fall meant to the nation, and our anxiety was for that, not for ourselves. No one would ever have been taken alive here. The word "surrender" was never once heard during our long siege in Mafeking. When it is understood that with 1200 men at the

STATEMENT OF ADMISSIONS, DISCHARGES, AND DEATHS AT THE VICTORIA HOSPITAL, MAFEKING, FROM OCT. 13TH, 1899, TO MAY 16TH, 1900, INCLUSIVE.

	Protectorate Regiment.		British South Africa Police.		Cape Police.		Bechuanaland Rifles.		Town Guard.		Inhabitants.		Natives and Cape Boys.		Staff.	Medical staff.	Boer prisoners.		Total.	
	Sick.	Casualties.	Sick.	Casualties.	Sick.	Casualties.	Sick.	Casualties.	Sick.	Casualties.	Sick.	Casualties.	Sick.	Casualties.	Sick.	Sick.	Casualties.		Sick.	Casualties.
Admissions ...	170	78	39	11	52	13	39	4	73	13	30	6	78	136	5	4	16		490	277
Discharged ...	149	50	34	5	46	9	38	3	61	5	26	4	41	87	5	4	9		404	172
Deaths	5	19	1	6	3	2	1	1	6	8	3	2	31	36	—	—	1		50	75
In hospital on May 16th ...	16	9	4	—	3	2	—	—	6	—	1	—	6	13	—	—	6		36	30

I think we might have saved one or two by operating, as in the case of the shell-wounds mentioned above. No argument can convince me that a hole in the bowel, or two or three of them, would not give the patient a better chance by being closed. All our patients so wounded died from septic peritonitis or hæmorrhage.

Medical cases, especially typhoid fever and dysentery, we had some trouble in treating owing to the scarcity of milk. Everyone, with a few exceptions, gave up all his fresh milk to the hospital, for which we were deeply grateful, but even so the supply was shorter than the demand. Commandeering only made matters worse. Malarial fever was bad and of a bad type. This was to be expected as the men had to live all day in newly-dug trenches; besides we had extremely heavy and "out-of-season" rains. In 1898 we had the same condition practically along the Bechuanaland Railway north of Mafeking, and never before or since has there been so much fever in the immediate vicinity of the railway, where at that time a great deal of virgin soil was disturbed followed by heavy "out-of-season" rains. The fever then also was of a bad type.

The food-supply, composed of various army rations, and an occasional ox, was nourishing enough, but the amount was limited. Towards the end of the siege horses, mules, and donkeys were eaten. A quart of "sowens" was daily given out as an addition to the half ration. "Ryan buns" (from Captain Ryan) were the salvation of the place. They were made from the Scotch oats imported for the horses. After being ground and the husks sieved off a six-ounce bun was made of the flour to which a very small portion of lard was added. Owing to no proper wire gauge being available the flour was a little coarse and husky, but it was nutritious, and, in spite of grumbling amongst unreasonable people it was eaten by all. There is no doubt we all knew what hunger was, and there was no one who was not constantly in a state of longing for a "good feed." Personally, about the last two months of the siege I got a terrible craving for white bread and would have purchased flour at any price could it have been obtained. I was not alone in this feeling, which I ascribe to a systemic starvation from the want of wheat-flour supplies. Of the three meats, horse, mule, and donkey, the latter is by far the best and most palatable. Horse

end of the siege we defended a front of 13 miles against a much shorter front at the beginning of the siege with 1500 men it will be realised what mental and bodily strain there must have been. No post had a decent body of men to defend it and some had only four or five men. At one point we were 65 yards from the enemy, near enough to throw stones into their trench and to have them sent back to ours.

I append a table from which you will see the numbers of sick and wounded respectively that we dealt with during our seven months' enforced retirement and the mortality, which considering everything is extremely light. In all 767 of the working garrison passed through hospital out of roughly speaking 1500 men.

Mafeking, Rhodesia.

THE IMPERIAL YEOMANRY FIELD HOSPITAL AND BEARER COMPANY.

BY CHARLES STONHAM, F.R.C.S. ENG.,

CHIEF SURGEON AND OFFICER COMMANDING THE IMPERIAL YEOMANRY FIELD HOSPITAL; SENIOR SURGEON, WESTMINSTER HOSPITAL, ETC.

I feel sure that you and our friends and colleagues at home will be interested to hear something of the doings of the Imperial Yeomanry Field Hospital and Bearer Company, occupying as they do a unique position as being the only field hospital and bearer company which has ever left the country under civil auspices. Let us hope that we shall but prove to be the pioneers of many such should the needs of the Empire unfortunately require their services.

Before leaving England I heard it asserted more than once that although civilians would prove of inestimable benefit in supplying the needs of stationary and base hospitals they could not succeed in the more arduous and hazardous duties of caring for the wounded on the field, nor would they themselves be fitted to withstand the fatigues and hardships necessarily entailed by marching with an army at the front. The career of our field hospital and bearer company has abundantly proved that doubts such as these are unfounded, and I venture to express the opinion that when the final verdict is passed upon our work even the most captious must fain admit that the Imperial Yeomanry Field Hospital and Bearer Company have fully justified the most sanguine

hopes of those who so patriotically equipped and sent them out.

I have the good luck to have associated with me Major G. E. Hale, D.S.O., R.A.M.C., who is in command of the bearer company. No man could be more agreeable as a companion and fellow-worker, and his expert knowledge of transport and camp life has been of the utmost service; if all men of the Royal Army Medical Corps had the excellent personal and professional calibre of Major Hale, we should hear, instead of carping censure, unqualified admiration for the corps to which he belongs. Non-commissioned officers and men have, as a whole, worked hard and well, comparing most favourably with men of the regular army, and as the majority of them are but 'prentice hands they are much to be commended.

In this and in my succeeding letters I propose to give a brief outline of the work which we have done. On leaving England our great anxiety was that the war would be over before we could reach Cape Town; now our aspirations are in an opposite channel, and our thoughts are turned homewards. Our mental condition has undergone much the same change as did the lady's on her first voyage—for the first 24 hours she expressed fears that the ship would go down and during the next few days she was afraid it would not. By the way our voyage was not propitious, for, as is well known, our transport, the *Winkfield*, collided with and sank the Union liner *Mexican* 70 miles from Table Bay.

Had we known the country to which we were going we should not have had any anxiety as to the speedy termination of the war. The British are fighting physical geography rather than a people, and those who have been out here and have seen what we have seen will be the most lenient in their judgment of reverses and checks, which are so easily condemned by some who have only the morning paper as a source of information and know only the physical character of their own country.

Since we left England we have marched from Bloemfontein on May 28th up to the present date 1150 miles, have been present at 11 engagements, and have afforded relief to 1850 patients; we have admitted 650 men into hospital who have been carried by the bearer company's ambulances, sometimes for days and for long distances, until they could be sent by sick convoy to the nearest stationary or base hospital.

We arrived in Table Bay on April 6th, and as our ship was considerably damaged in the collision we were at once sent into the dock instead of waiting our turn to disembark. I need not dwell upon the difficulties which we experienced in Cape Town in being sent on; at last they were overcome and we entrained on April 29th to proceed north, although our actual destination was apparently unknown. However, in due course we arrived at Bloemfontein on May 2nd, having stopped a few hours at Deelfontein to see the Yeomanry Base Hospital and to have breakfast with our numerous friends there. At fever-stricken Bloemfontein we were allotted camping ground in the foulest place which I have ever seen, and here we waited till May 28th before we could get transport animals. We here packed our wagons and made all ready for a start as soon as we should get orders. On May 28th we marched under orders to proceed to Kroonstad. We were quite alone and had no escort; indeed, we marched alone as far as Pretoria, a very different condition of things, as we were to find later, to forming part of an advancing army. We arrived at Kroonstad on June 4th, drew four days' rations and started on the next morning for Johannesburg, but we were not destined to reach there so quickly as we thought. It is now well known from my telegrams and letters that we were present at the action on June 7th when the Boers, under General C. de Wet, destroyed the line at Rhenoster river, cut up the 4th Derby Militia, and destroyed our mails, stores, warm clothing, and ammunition at Roodevaal station which they eventually blew up. It was here that we first came under fire, the Boers, mistaking us for a convoy and reinforcements, firing on our wagons but fortunately doing no harm. They, however, made us prisoners, but gave us every facility for carrying on our work and showed us many kindnesses until they were driven back by Lord Methuen on June 11th, after which action we admitted to our hospital 12 wounded Yeomen.

On June 7th we had 29 killed and 91 wounded, the latter keeping us hard at work for two days; many of these men had been injured by fragments of shell, the wounds in some cases being exceedingly severe, the soft structures being lacerated and the bones much comminuted. Our arrival on the scene was providential. Dr. Buchanan, the regimental medical officer attached to the Derbyshires was singlehanded, and had not the necessary equipment with him for dealing with so many severe cases, even if it had been in the power of one man to do so.

Our experiences at Rhenoster river were most interesting and I think I may say unique, but as my letters already referred to have given a short account of them I need not dwell on them further. It was most unfortunate that we had to move on June 9th, a step rendered imperative by the impending action (June 11th), as De Wet meant to occupy the kopje beneath which we were, and moving the patients necessarily entailed considerable suffering and, I regret to say, cost some lives which would, I think, have otherwise been saved. On June 11th, after the action, Lord Methuen came round the hospital, saw all the wounded men, and expressed his satisfaction with our arrangements. With the advent of such a large force we of course became very busy, as it soon became known that our equipment was all that could be desired.

On June 14th we sent a sick convoy of 106 by road to Kroonstad, our ambulances taking them all under Major Hale's command. He returned on June 18th, and on the following day I took a further convoy of 102 by train, returning on the next day.

On June 22nd we struck camp and proceeded on our way to Johannesburg, arriving there on the 27th and encamped in the grounds of the Wanderers' Club.

On June 29th we set out for Pretoria and reached there on the next day, when I had an interview with Lord Roberts in reference to our experiences at Rhenoster river, as the result of which he wrote to General de Wet thanking him for his kindness to us during the time we were in his hands. We remained at Pretoria until July 7th (camping at Arcadia), when we received orders to march and join General Mahon's brigade, which was at Reitfontein, near Irene. Failing to come up with him there we were to continue our march until we found him. Accordingly we marched to Reitfontein, but the brigade had left, so the next day we determined to push on although we had no means of finding out where General Mahon was, but an officer commanding a detachment of Irish Fusiliers who were holding a position near our camp told us he thought Mahon was at Baasfontein. We eventually found the brigade, which had joined General Hutton, at Reitfontein No. 6, but on our way we nearly marched into the Boer lines, for we had taken a wrong road, and only discovered our mistake when we saw and questioned our own advanced outposts whose line we had passed through.

On July 9th, 10th, and 11th we sent out ambulances as fighting was in progress, but we had very few casualties, the Boers being strictly on the defensive.

On July 12th the camp broke up and the force marched back to Pretoria; we, however, went with 50 sick to Springs where we arrived late in the afternoon and were lucky enough to be able to send the sick to Johannesburg on the same evening by train. On the following day we telegraphed to the principal medical officer, Pretoria, for instructions and received orders to return to Pretoria at once. We marched on July 15th, arriving at our destination on the 17th. Up to this time we had been marching by ourselves, but we were to become part of an advancing force particulars of which I shall give you in my next letter.

Barberton, Sept. 20th.

NOTES FROM SOUTH AFRICA.

(FROM OUR TRAVELLING CORRESPONDENT.)

I arrived at Pretoria four days ago (Oct. 1st) after an uneventful journey from Kroonstad. Nearly two months have elapsed since my previous visit and during that time the aspect of the town has considerably changed. The pretty little capital of the Transvaal has been so beautified by the advent of the South African spring that I should hardly have known it again. The stately blue-green trees and the enormous weeping willows which adorn the chief streets and avenues are now clothed in vivid green and the gardens of the numerous villas are filled with flowers. The cloudy sky and the misty atmosphere—heralds of the approaching rainy season—have softened the sharp outlines of the surrounding hills, and the general effect produced is more that of an English than of an African landscape. Though the nights are fairly cool the heat at noon-day is now somewhat oppressive; the climate is more "relaxing" than ever, and

most newcomers complain of indefinable languor and indisposition to exertion.

The military medical arrangements are now, and have been for some time, complete and in full working order. The hospitals are fairly full, but chiefly with mild or convalescent cases, and they can be readily depleted at any moment by the hospital train service and the convalescent camps. The following is a complete list of the military hospitals now established at Pretoria and in its environs. For convenience of administration the town is divided into an eastern and a western section. In the eastern section are comprised No. 2 General Hospital, the Welsh Hospital (this has just been amalgamated with No. 2 General Hospital), Langman's Hospital, the Imperial Yeomanry Branch Hospital, No. 2 Infectious Hospital, the Nursing Sisters' Hospital, and a convalescent camp. In the western section there are No. 1, No. 2, and No. 3 Model School Hospitals, the Palace of Justice Hospital (which includes the *personnel* of the Irish Hospital), the Racecourse Hospital, the Railway Rest Hospital, No. 1 Infectious Hospital, and the Native Followers' Hospital. Of these the three large hospitals—No. 2 General Hospital, the Imperial Yeomanry Hospital, and the Palace of Justice Hospital—can take nearly 2000 patients. Including the smaller hospitals and the convalescent camp, Pretoria has now accommodation for upwards of 4000 sick men. The total number of patients in hospital four days ago was 1997. Of these 242 were suffering from enteric fever, 180 from "other fevers" (including malarial fever, simple continued fever, and a few cases of measles and diphtheria), and 149 from gunshot wounds. The comparatively small number of cases of enteric fever and "other fevers" is a cheering sign, but old residents prophesy a recrudescence of fever after the rains.

The Princess Christian Hospital train came into Pretoria on the day after my arrival, and through the courtesy of Dr. Percy Lowe, the medical officer in charge, I was enabled to take a short trip to Charlestown, in the north of Natal, and back in this beautiful train. Our route lay *viâ* Elandsfontein, Heidelberg, and Standerton, through a pretty country of rolling downs. This part of the Transvaal much resembles the Wiltshire downs in its general features. The line between Elandsfontein and Charlestown is closely guarded, as small bodies of the enemy are still lurking in the neighbourhood. At Standerton is No. 4 Stationary Hospital, a large marquee hospital of, I should think, some 400 beds, but time did not permit of a visit. Charlestown, where the train unloaded, is a tiny town just within the Natal border. No. 1 Stationary Hospital is established here, a beautifully laid out hospital of 500 beds. A stay of a few hours at Charlestown just allowed me time enough to visit Majuba Hill and Laing's Nek, names which recall sad memories to English ears.

On our return to Pretoria we found both No. 3 (under Major Russell) Hospital train and No. 5 Hospital train (under Major M. T. Yarr) in the station, and I had an opportunity of comparing these trains, which may be considered types of the five Government trains proper, with the Princess Christian train. The Princess Christian train, unlike the others, was specially designed and built as a hospital train. As it has been frequently described with great minuteness I merely give a general sketch of its arrangements here for the purpose of comparison. It is composed of seven "bogey" cars, each painted white outside and adorned with red crosses and "Princess Christian Train" in gold letters. The first car contains a foul linen store and two beds for nursing sisters in one room and two beds for sick officers in another. The second car has two beds for medical officers, a mess-room, a dispensary, and a pantry. The position of the foul linen store is, on the face of it, a most undesirable one and is a grave blot on the general design. I think, personally, too, that the presence of sick officers in the staff carriages is an objectionable feature. The third, fourth, fifth, and sixth cars are for patients. Each car carries 18 patients and four orderlies. Including two sick officers the whole train thus carries 74 patients (22 less than the Government trains). The wards are fitted with removeable iron cots in three tiers. The whole interior is beautifully decorated, the beds have pretty coverlets, and the general effect is wonderfully bright and cheery. Each ward has a fixed wash-basin, a pretty stove, and a water-closet. The moveable cots are a very great advantage, as they enable patients to be transferred from stretchers into cots outside the train, but I think that three tiers are a tier too many. The seventh and last car is the kitchen car; it is beautifully fitted up, but is in a most inconvenient position at the extreme end of the train. There is no pack-store car—a very serious omission. An ordinary short railway truck has had to be added to receive men's kits, but there is no through communication between it and the rest of the train so that kits cannot be sorted *en route*. There should, of course, have been a special pack-store car, part of which could have been used as a foul linen store, as in the Government trains. The position of the foul linen store, the absence of a pack-store, and the three-tier arrangement of the cots are the main defects in the design of the Princess Christian train. Apart from these defects it is a beautiful hospital on wheels in which patients enjoy every luxury and comfort that money can buy. The staff is practically the same as that of the Government trains—two medical men (at the present moment there is only one), two nurses, one civil compounder, one *chef*, and 19 rank and file.

Speaking generally, the five Government hospital trains are of the same type, and they are all composed of converted passenger-cars. Each train is made up of seven "bogey" cars—longer and wider than in the Princess Christian train—arranged in the following order. First the staff car, a first-class saloon car of five compartments, two of which are occupied by the medical staff and two by the nursing staff, the fifth being used as a staff mess-room. The second is the kitchen car, with orderlies' bunks on one side of the kitchen and the dispensary on the other. The third, the fourth, the fifth, and the sixth are long corridor cars gutted and fitted with bunks, each car containing 24 beds in two tiers, with a water-closet and a lavatory at each end. The seventh is the pack-store, linen store, and stewards' store. Four beds in each ward are screened off by curtains and may be used for officers. Each train thus carries 96 patients, of whom 16 may be officers. The carriages might be better ventilated. The cots—except in No. 4 train—are fixed, and the trains, though scrupulously clean, are not so prettily got up, either internally or externally, as the Princess Christian train. On the whole, however, they are very practical and have worked exceedingly well throughout the campaign, and many people prefer their general arrangement to that of their beautiful rival. The so-called "Boer Ambulance" train is composed of two captured Boer ambulance carriages—large and well-ventilated but without water-closets and roughly put together—to which an indefinite number of ordinary saloon cars are added; it is only used for convalescents.

Pretoria, Oct. 4th.

THE MEDICAL STAFF AND THE BOARD OF MANAGEMENT OF THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

THE following important communication has been addressed to the editor of the *Times*:—

SIR,—The controversy which has been carried on in your columns between the board of management of the National Hospital for the Paralysed and Epileptic and its medical and surgical staff is of public importance. The main point for which the staff of the hospital is struggling is a moderate representation on the board of management, the absence of which has led to irritating friction and to the present unhappy state of affairs.

It is impossible that the inclusion of representatives of the staff could do otherwise than strengthen the board of management in wisely carrying on the great charitable work with which it is entrusted by the governors.

From long experience of hospital administration we desire to record our firm conviction that the demand of the staff for representation on the board of the hospital is a perfectly reasonable one and one which in other hospitals has conduced to harmonious working and efficient administration.

We venture to express the hope that the board of management and the governors will put an end to this controversy by granting the representation asked for, in order that the hospital, whose reputation is more than national, may continue its career of usefulness,

We are, Sirs, yours, &c.,

Lister; William H. Broadbent, M.D., F.R.C.P., F.R.S.; John Williams, M.D., F.R.C.P.; J. Fayrer, K.C.S.I., F.R.S.; Henry Thompson, F.R.C.S.; William Mac Cormac, K.C.V.O., F.R.C.S.; J. Burdon Sanderson,

F.R.S.; R. Douglas Powell, M.D., F.R.C.P.; Samuel Wilks, M.D., F.R.C.P., F.R.S.; Walter Foster, M.P., M.D.; John Batty Tuke, M.P., M.D.; W. B. Dalby, F.R.C.S., St. George's Hospital; Dyce Duckworth, M.D., F.R.C.P., St. Bartholomew's Hospital; T. Lauder Brunton, M.D., F.R.C.P., F.R.S., St. Bartholomew's Hospital; Hermann Weber, M.D., F.R.C.P., German Hospital; T. Clifford Allbutt, M.D., F.R.C.P., F.R.S., University of Cambridge; W. H. Allchin, M.D., F.R.C.P., Westminster Hospital; Arthur E. Barker, F.R.C.S., University College Hospital; Thomas Barlow, M.D., F.R.C.P., University College and Great Ormond-street Children's Hospitals; A. Bovce Barrow, M.B., F.R.C.S., Royal Free Hospital; William H. Bennett, F.R.C.S., St. George's Hospital; John Astley Bloxam, F.R.C.S., Charing-cross Hospital; J. Mitchell Bruce, M.D., F.R.C.P., Charing-cross Hospital; Thomas Bryant, F.R.C.S., Guy's Hospital; Robert W. Burnet, M.D., F.R.C.P., Great Northern Hospital; William Cayley, M.D., F.R.C.P., Middlesex Hospital; W. B. Cheadle, M.D., F.R.C.P., St. Mary's and Great Ormond-street Children's Hospitals; H. H. Clutton, M.A., F.R.C.S., St. Thomas's Hospital; Alfred Cooper, F.R.C.S., St. Mark's Hospital; William Ewart, M.D., F.R.C.P., St. George's Hospital; George P. Field, M.R.C.S., St. Mary's Hospital; T. Henry Green, M.D., F.R.C.P., Charing-cross Hospital; Warrington Haward, F.R.C.S., St. George's Hospital; Christopher Heath, F.R.C.S., University College Hospital; Donald W. C. Hood, M.D., F.R.C.P., West London Hospital; Henry G. Howse, M.S., F.R.C.S., Guy's Hospital; C. B. Keetley, F.R.C.S., West London Hospital; D. B. Lees, M.D., F.R.C.P., St. Mary's and Great Ormond-street Children's Hospitals; Stephen Mackenzie, M.D., F.R.C.P., London and Royal Ophthalmic Hospitals; J. Macready, F.R.C.S., Great Northern Hospital; Howard Marsh, F.R.C.S., St. Bartholomew's and Great Ormond-street Children's Hospitals; Henry Morris, M.A., F.R.C.S., Middlesex Hospital; William M. Ord, M.D., F.R.C.P., St. Thomas's Hospital; Edmund Owen, F.R.C.S., St. Mary's Hospital; F. W. Pavy, M.D., F.R.C.P., F.R.S., Guy's Hospital; Bernard Pitts, M.A., F.R.C.S., St. Thomas's and Great Ormond-street Children's Hospitals; James E. Pollock, M.D., F.R.C.P., Brompton Hospital; Sydney Ringer, M.D., F.R.C.P., F.R.S., University College Hospital; Frederick T. Roberts, M.D., F.R.C.P., University College Hospital; William Rose, F.R.C.S., King's College Hospital; Seymour J. Sharkey, M.D., F.R.C.P., St. Thomas's Hospital; Walter G. Spencer, M.S., F.R.C.S., Westminster Hospital; Waren Tay, F.R.C.S., London and Royal Ophthalmic Hospitals; Frederick Taylor, M.D., F.R.C.P., Guy's Hospital; Frederick Treves, F.R.C.S., London Hospital; Samuel West, M.D., F.R.C.P., St. Bartholomew's and Royal Free Hospitals; Alfred Willett, F.R.C.S., St. Bartholomew's Hospital; C. Theodore Williams, M.D., F.R.C.P., Brompton Hospital; I. Burney Yeo, M.D., F.R.C.P., King's College Hospital.

THE PLAGUE.

PLAGUE IN GLASGOW.

SIX weeks have now elapsed since any fresh case of plague was notified in Glasgow. The last plague patients in the Belvidere Hospital were discharged on Nov. 3rd, so that if no fresh case should arise in the interval Glasgow will be able to be officially declared free from plague at the expiration of 10 days from that date—namely, on Nov. 13th.

PLAGUE IN BREMEN.

A fatal case of plague is reported from Bremen. It occurred in the person of a seaman on board a steamer trading from Buenos Ayres. The steamer arrived at Bremen on Oct. 27th and from that date to Oct. 30th the patient was in a private house from which he was removed to the hospital, where he died on Nov. 5th. All necessary precautions as to disinfection and isolation of "contacts" are being taken.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6379 births and 3908 deaths were registered during the week ending Nov. 3rd. The annual rate of mortality in these towns, which had been 17·1, 17·1, and 17·3 per 1000 in the three preceding weeks, further rose last week to 17·5. In London the death-rate was 16·7 per 1000, while it averaged 18·1 in the 32 provincial towns. The lowest rates in these towns were 9·1 in Norwich, 10·3 in Croydon, 13·4 in Cardiff, and 13·6 in Leicester; the highest rates were 21·2 in Sheffield, 22·4 in Gateshead and in Manchester, 23·4 in Liverpool, and 25·5 in Salford. The 3908 deaths in these towns included 425 which were referred to the principal zymotic diseases, against 468 and 485 in the two preceding weeks; of these, 121 resulted from diarrhœa, 94 from diphtheria, 81 from "fever" (principally enteric), 49 from measles, 44 from whooping-cough, and 36 from scarlet fever. The lowest death-rates last week from these diseases occurred in Plymouth, Bristol, Cardiff, and Bradford; and the highest rates in West Ham, Leicester, Birkenhead, Burnley, Blackburn, and Sheffield. The greatest mortality from measles occurred in Brighton and Swansea; from whooping-cough in Gateshead; from "fever" in Portsmouth, Birmingham, Birkenhead, and Blackburn; and from diarrhœa in Manchester, Burnley, Huddersfield, and Halifax. The mortality from scarlet fever showed no marked excess in any of the 33 towns. The 94 deaths from diphtheria included 42 in London, seven in West Ham, seven in Leicester, four in Portsmouth, four in Liverpool, and four in Sheffield. No fatal case of small-pox was registered last week either in London or in any of the 32 large provincial towns; and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday last, Nov. 3rd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2619, against numbers increasing from 1703 to 2489 on the nine preceding Saturdays; 336 new cases were admitted during the week, against 322, 328, and 320 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had increased from 164 to 236 in the four preceding weeks, further rose last week to 267, but were 108 below the corrected average. The causes of 57, or 1·5 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Bradford, Leeds, Newcastle, and nine other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Liverpool, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·5 and 19·6 per 1000 in the two preceding weeks, was again 19·6 during the week ending Nov. 3rd, and was 2·1 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 11·3 in Leith and 15·1 in Edinburgh, to 22·4 in Glasgow and 24·6 in Paisley. The 607 deaths in these towns included 24 which were referred to diarrhœa, 18 to whooping-cough, 12 to "fever," eight to measles, eight to scarlet fever, and seven to diphtheria. In all, 77 deaths resulted from these principal zymotic diseases, against 67 in each of the two preceding weeks. These 77 deaths were equal to an annual rate of 2·5 per 1000, which was 0·6 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had decreased from 53 to 25 in the four preceding weeks, further declined last week to 24, of which 14 occurred in Glasgow, four in Dundee, and three in Edinburgh. The deaths from whooping-cough, which had increased from 13 to 18 in the three preceding weeks, were again 18 last week, and included 15 in Glasgow. The deaths referred to different forms of "fever," which had been six and four in the two preceding weeks, rose again last week to 12, of which eight were registered in Glasgow and two in Greenock. The fatal cases of measles, which had been two and four in the two preceding weeks, further rose to eight last week, and included five in Aberdeen and two in Edinburgh. The deaths from scarlet fever, which had been

five and eight in the two preceding weeks, were again eight last week, and included five in Glasgow and two in Paisley. The fatal cases of diphtheria, which had been eight and six in the two preceding weeks, rose again last week to seven, of which three were recorded in Edinburgh and two in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had increased from 98 to 139 in the four preceding weeks, further rose last week to 148, and showed an excess of 31 over the number in the corresponding period of last year. The causes of 34, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 26·4, 24·9, and 20·0 per 1000 in the three preceding weeks, rose again to 21·9 during the week ending Nov. 3rd. During the past four weeks the death-rate in the city has averaged 23·3 per 1000, the rate during the same period being 15·8 in London and 15·2 in Edinburgh. The 147 deaths belonging to Dublin registered during the week under notice were 13 in excess of the number in the preceding week, and included 13 which were referred to the principal zymotic diseases, against numbers declining from 36 to 12 in the four preceding weeks; of these, five resulted from diarrhœa, three from whooping-cough, three from "fever," one from measles, and one from scarlet fever. These 13 deaths were equal to an annual rate of 1·9 per 1000, the zymotic death-rate during the same period being 1·4 both in London and in Edinburgh. The fatal cases of diarrhœa, which had decreased from 27 to six in the four preceding weeks, further declined last week to five. The deaths from whooping-cough, which had been two in each of the two preceding weeks, rose to three last week. The fatal cases of "fever," which had been five and four in the two preceding weeks, further declined to three last week. The 147 deaths in Dublin last week included 26 of infants under one year of age and 35 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons considerably exceeded the number in the preceding week. Six inquest cases and six deaths from violence were registered, and 69, or nearly one-third, of the deaths occurred in public institutions. The causes of seven, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon (retired) Alfred Gideon Delmege, M.V.O., has been allowed to assume the rank of Deputy Inspector-General of Hospitals and Fleets.

The following appointments are notified:—Fleet Surgeon E. W. Luther to the *Hood*. Staff Surgeons; J. H. Whelan to the *Hood* and J. McElwee to the *Pioneer*. Surgeons: A. H. H. Vizard to the *Boscawen* for the *Agincourt*; H. I. Rogers to the *Northampton*; E. C. Cridland to R.M. Depôt, Deal; M. H. Knapp to the *Wildfire*; H. R. Gardner to the *Hood*; A. J. Laurie to the *Cambridge*; C. S. Facey to the *Vivid*; W. K. Hopkins to the *Wye*; and J. K. Raymond to the *Wildfire*.

ROYAL ARMY MEDICAL CORPS.

The under-mentioned officers of the Royal Army Medical Corps are granted the local rank of Surgeon-General whilst Principal Medical Officers, Lines of Communication, South Africa:—Colonel W. H. McNamara, C.B., and Colonel J. A. Clery. Colonel J. F. Supple is granted the local rank of Surgeon-General whilst Principal Medical Officer at the Base, Cape Town. Colonel T. Gallwey, C.B., is granted the local rank of Surgeon-General whilst Principal Medical Officer, Natal. The undermentioned officers are granted the local rank of Colonel whilst Principal Medical Officers of Divisions, Field Force, South Africa:—Lieutenant-Colonel S. H. Carter, Lieutenant-Colonel O. Todd, Lieutenant-Colonel G. T. Goggin, Surgeon-Lieutenant-Colonel J. Magill, Coldstream Guards, and Major B. M. Skinner. The undermentioned officers are granted the local rank of Colonel in charge of General Hospitals, Field Force, South Africa:—Lieutenant-Colonel Morgan D. O'Connell, Lieutenant-Colonel A. Keogh, Lieutenant-Colonel H. Martin, Major T. R. Lucas, Major H. J. Barratt, and Major S. Westcott. The undermentioned officers are granted the local rank of Colonel whilst Principal Medical Officers of Divisions in South Africa:—Lieutenant-Colonel J. D. Edge Lieutenant Colonel W. Donovan, Lieutenant-Colonel R. W. Mapleton, Lieutenant-Colonel, J. A. Gormley, and Lieutenant-Colonel W. A. May. The undermentioned officer is granted the local rank of Colonel whilst Principal Medical Officer of a Division and Principal Medical Officer of the Field Army, Natal:—Lieutenant-Colonel W. B. Allin. The undermentioned officer is granted the local rank of Colonel whilst Principal Medical Officer of a Division and Principal Medical Officer at Pretoria:—Lieutenant-Colonel W. L. Gubbins. The undermentioned officers are granted the local rank of Colonel whilst in charge of General Hospitals in South Africa:—Lieutenant-Colonel O. G. Wood, Lieutenant-Colonel J. C. Dorman, Lieutenant-Colonel J. F. Williamson, Lieutenant-Colonel B. W. Somerville-Large, Lieutenant-Colonel R. T. Beamish, Lieutenant-Colonel J. G. MacNeece, and Major W. T. Swan.—*The London Gazette*.

Captain W. A. Ward has joined the home district (London) for duty.

VOLUNTEER CORPS.

Artillery: 1st Gloucestershire: Surgeon-Major J. S. Carleton to be Surgeon-Lieutenant-Colonel. *Rifle:* 9th Lanarkshire: William Jones Mackinnon to be Surgeon-Lieutenant. 3rd (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Wallace Ainsworth Pride to be Surgeon-Lieutenant. 1st Tower Hamlets: John Frederick Fitzgerald Parr to be Surgeon-Lieutenant. 2nd Volunteer Battalion the East Yorkshire Regiment: Surgeon-Captain A. F. A. Fairweather to be Surgeon-Major.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Henry Fulham Turner to be Surgeon-Lieutenant.

DEATHS IN THE SERVICES.

Fleet Surgeon Richard John Barry, R.N. (retired), on Nov. 5th, aged 54 years. He entered the service as surgeon in 1871, was promoted to staff surgeon in 1883, and retired after obtaining the rank of fleet surgeon in 1891.

TRANSVAAL WAR NOTES.

At the request of Lord Roberts the Welsh Hospital will remain in South Africa for a further period of three months.

Major S. F. Freyer, R.A.M.C., Lieutenant-Colonel Johnston, R.A.M.C., and Lieutenant-Colonel Harvey, R.A.M.C., have been discharged from hospital to duty.

FOOD ON BOARD TRANSPORTS.

Mr. J. Keir Hardy, M.P., sends to the *Times* a complaint from three members of the force ordered from South Africa to China with reference to the food supplied. Among other things they complain of the following, and if a *primâ facie* case can be made out certainly some inquiry into the matter is demanded. "The food given us was bad and insufficient. ..... The bread was black, sour, and heavy; the biscuits naturally hard and very oily. The biscuits bore date 1870 ..... and some of them bore even an earlier date. ..... The salt beef was simply abominable. It is kept in rough-looking tubs and was dated 1873. ..... The meat had to be thrown overboard, and we did not receive anything in lieu thereof. ..... The accommodation was also limited; two-thirds of the ship was reserved for the officers and sergeants, who numbered in all about 50, roughly, and one-third for the rank and file, non-commissioned officers and men, numbering about 500, and who have the fore part of the ship allotted them, with nowhere to sit or lie down during the day except on the dirty and rusty iron deck."

MENTIONED IN DESPATCHES.

In the despatches from the general officer commanding in China and Hong-Kong Major Watson, R.A.M.C., is mentioned as having "performed excellent work under great difficulties." The following paragraph also appears: "The medical arrangements for the treatment, care, and removal of the wounded reflected great credit on Major Watson, R.A.M.C., and his subordinates. Not only were those arrangements sufficient for the British wounded, but he was also able to take medical charge of American, French, and Japanese patients and to send them into hospital. Captain Prynne, R.A.M.C., and Assistant-Surgeon Pullen, I.S.M.D., were in the advanced fighting line all day dressing cases under fire. They are both valuable officers, always cool and collected."

THE CRISIS IN CHINA.

"For the first time in history the civil medical profession as a whole has had its position officially recognised by the military on a great historical occasion." Thus writes Dr. Wykeham Myers, who as representing the whole body of the civil medical profession was granted permission by General Gaselee to accompany the troops in their triumphal march into the Imperial Palace at Pekin. It is gratifying to learn from the *North China Daily News* that Dr. Wykeham Myers will probably be mentioned in despatches for his excellent work when in charge of the wounded after the battle of Yangtsun, when the junk sank in the Peiho at dead of night with 25 wounded on board, all of whom were safely got out by Dr. Myers.

NATIVE AFRICAN REGIMENTS.

In the *Times* of Nov. 7th there is a very interesting interview with Dr. G. Douglas Gray, P.M.O. of the British Central African Protectorate, who has just returned from Kumassi having accompanied, as medical officer, the force of Central African Rifles dispatched to the Gold Coast. Apart from the usefulness of the coloured man in such cases as the late expedition to the Gold Coast the interview brings out very clearly the great good which the influence of the British officer has upon the character of practically savage native races.

THE NAVAL BRIGADE HONOURS AND PROMOTIONS.

The Queen has been graciously pleased to approve of the following appointment to the Distinguished Service Order: Surgeon Charles Clarke Macmillan.

Fleet-Surgeon James Porter to be Deputy-Inspector-General of Hospitals and Fleets; Staff Surgeon Frederick J. Lilly to be Fleet Surgeon; and Surgeon Ernest C. Lomas to be Staff Surgeon.

UGANDA.

The following telegram has been received at the Foreign Office from Colonel Ternan, Zanzibar:—"Oct. 27th.—Following received to-day from Acting Commandant of Uganda Rifles:—'Fort Ternan, Oct. 21st.—Regret to say that Dr. J. L. Sherlock, Uganda Medical Department, was killed in action with the Nandi on night of Oct. 13th.'"

Colonel Davis, I.M.S., has been appointed Principal Medical Officer of the China Field Force under General Gaselee, Colonel Bookey having vacated his charge in consequence of ill-health.

Correspondence.

"Audi alteram partem."

THE TEACHING OF ANÆSTHETICS.

To the Editors of THE LANCET.

SIRS,—Your valuable leading article in THE LANCET of Oct. 27th (p. 1215) dealing with the question of the teaching of the art of producing anæsthesia will be welcomed by all who are attempting to give adequate instruction in this subject.

The two points which stand out as the most important are—(1) the absolute necessity for students actually to give the anæsthetic under supervision during their instruction; and (2) the further recognition by physicians and surgeons of the importance of the subject of anæsthetics.

During my own student days the system adopted at my *alma mater* was that the budding anæsthetist stood by the side of the responsible chloroformist or etherist and saw or failed to see, as the case might be, that gentleman's procedure. In most cases he saw nothing, as his attention was riveted upon the steps of the operation. We did not in those days recognise the importance of the study in which we were engaged and were keenly alive to the importance of operative surgery. Systematic lectures on anæsthetics or even demonstrations were not given, so that beyond the most crude notions we had no grip of what we should look for and what to do and what not to do. At the best the attendance was wholly uninteresting and therefore made perfunctorily, whereas now in some hospitals the students actually give the anæsthetics and are asked the reasons for this and that, are made to examine their patients before and after the administration of the anæsthetic, they learn to appreciate that the subject is literally one of vital interest and has a connexion not only with the operation theatre but with the ward—has, in fact, a clinical as well as a practical aspect. They learn that with patients whom they have personally examined and found to show noteworthy departures from the normal a careful choice of anæsthetics has to be made and a definite line of procedure taken. They recognise the phenomena of anæsthesia as they occur and are ready to meet with and combat complications or dangers should such arise. The study becomes a fascinating one if the teacher chooses to show its possibilities, its width and importance. There is, however, the personal equation of the student to be reckoned with. I can usually tell on the first day whether a man will make a satisfactory anæsthetist. The manner in which he holds an inhaler and the way in which he attacks his subject give one a tolerably accurate idea of this. Some never learn and never go beyond the rule-of-thumb stage of giving anæsthetics. These men are always a danger to their patients and their own peace of mind. As you say, much of this failure to acquire the rudiments of their subject is due to the lack of interest taken in the matter by the profession at large and the heads of the profession. When the subject of anæsthetics, using that term as a brief one to connote the science and art of producing anæsthesia, is relegated to a wholly subsidiary position, unrecognised in the curriculum which includes such abstruse studies and arts as practical pharmacy and vaccination, it is not surprising that the lazy and the careless student should absent himself from the classes which teach a non-scheduled subject. At present the individual teacher of anæsthetics may by his personal handling of students infuse enthusiasm, but usually he does so by dint of self-denial and strenuous endeavour and not infrequently in the teeth of cool indifference and even worse from many of those who sit in the seats of the mighty. He is told that the students have too much to think of already, are over-taught and over-examined, and to add yet another subject to their curriculum is to attempt the placing of that last straw which must render laminectomy the only hope of salvation for the camel student. Although most of the ablest surgeons admit the necessity of skilled anæsthetists and many loyally support those of us who are striving to teach our subject as it should be taught, yet many fail to help us and have not cast the slough of those old days when the house surgeon, the ward nurse, or anyone, in fact, was considered a competent chloroformist and was taken with the surgeon "to give chloroform" while he did the operation and "kept an eye on the patient."

Medical men frequently send to us strange messages with patients—e.g., "A B must on no account take 'gas' but may take chloroform," A B being a fit subject for the former, not for the latter. This would seem to show that the anæsthetist is looked upon as a "giver of an anæsthetic." But he should be, and in many cases is, far more. His knowledge of medicine should be adequate to enable him to conduct a most accurate physical examination, including that of the blood and secretions, and his familiarity with surgery should enable him to know what the operator requires and what will be the effect of the operator's manipulations upon the patient under anæsthesia. Again, his knowledge of anæsthetics should be such that he can adapt the anæsthetic to the necessities of the patient and the requirements of the surgeon. Of course, such a counsel of perfection cannot be attained to by the average student, but even he can at least enter the vista at the end of which he may dimly see the possibilities of perfection for which his teacher is daily striving. The tremendous responsibility of the anæsthetist, whose want of knowledge, of skill, or of courage may jeopardise the patient's life or frustrate the surgeon's most skilful endeavours, should be most fully recognised, his facilities for teaching increased, and his place in the system of the hospital training conceded, while his subject should be scheduled and made compulsory. Were this done much would be accomplished and the student of the future would be better equipped than have been many of his predecessors.

I am, Sirs, yours faithfully,

DUDLEY W. BUXTON,
Lecturer on, and Teacher of, Anæsthetics in University College Hospital.
Mortimer-street, Cavendish-square, W., Oct. 30th, 1900.

"ON THE CONFUSION OF TWO DIFFERENT DISEASES UNDER THE NAME OF RUBELLA (ROSE-RASH)."

To the Editors of THE LANCET.

SIRS,—There can be no question that this subject has not received the discussion which its importance deserves. Criticism is always wholesome and necessary in the attainment of truth, but it does not alter facts.

After a close study of rubella now for 30 years, with several hundred cases for investigation, I think that I may claim to know the disease in all its phases when I see it, and I could come to no other conclusion than that two diseases have been confused under its name.

I base my conclusions on these facts:—1. That all four epidemics referred to in THE LANCET of July 14th, 1900, were the same disease. 2. That in the epidemic of 1896, where there were two definite diseases, the one was scarlet fever and the other what I then regarded as a variety of rubella. This second disease, occurring concurrently with scarlet fever, proves that it could not be scarlet fever. 3. That the disease is not a variety of rubella but a distinct disease is further proved by the fact that nearly 50 per cent. of the cases occurring in April, 1900, had previously passed through an attack of rubella within a year or more. This makes it clear that there is a "fourth disease" which has hitherto been included under the head of rubella by the profession, myself included.

In reply to my kind critic Dr. C. K. Millard, who raises the question whether the epidemic of 1900 was not after all scarlet fever, I would urge:—1. That I have never seen a case of scarlet fever with a very full rash without having a markedly accelerated pulse, whereas in this fourth disease with the fullest rash the pulse is generally not increased in frequency. 2. That I have never seen a case of scarlet fever with an abundant rash without a marked rise in temperature, whereas in this disease, with the fullest rash, the temperature usually is not raised above 99° F. 3. That I have never seen a case of scarlet fever in the young with a copious rash where the tongue did not peel on the fourth day, whereas in this disease with the fullest rash, which so much resembles the scarlet fever rash as to be, considered alone, indistinguishable, I have never seen the tongue peel. 4. That I have never seen a case of scarlet fever with a very full rash where the skin did not desquamate freely, whereas in this disease I have seen the very fullest rash not followed by any peeling, or the merest dryness of skin. 5. And, lastly, it is scarcely conceivable that were cases of scarlet fever removed from bed after five days, permitted to go out on the eighth day, and, after thorough disinfection on the fourteenth day, regardless of desquamation, allowed to go home to all parts of the country, various sequelæ would not have arisen, and scarlet fever have been spread from one end of the land to the other—even with the few cases I have recorded as the "fourth disease"—were they in reality scarlet fever.

I am, Sirs, yours faithfully,

Rugby, Nov. 3rd, 1900. CLEMENT DUKES.

"APPENDICITIS."

To the Editors of THE LANCET.

SIRS,—I am much obliged to Sir Samuel Wilks for his kind letter in THE LANCET of Nov. 3rd (p. 1303). The quotations he gives from the writings of Bright and Addison and the references to his own teaching at Guy's will interest, and be appreciated by, all your readers.

I, however, still feel that it is only during the last 15 or 20 years—and I am almost inclined to say the last 10 years—that the profession has fully realised that it is in the appendix itself that probably more than 95 per cent. of inflammatory changes in the cæcal region have their origin. Before this time, I believe, in most minds the appendix occupied the background of the picture, and when a medical man saw a case of "typhlitis" he imagined, in the large majority of cases, an inflammation in and around the cæcum which had started in the walls of this part of the intestinal tract, the appendix being scarcely thought of. Now the appendix occupies the centre and dominating part in the picture, and inflammatory changes originating primarily in the cæcum are relegated to an inconspicuous background.

I am, Sirs, yours faithfully,

Nov. 5th, 1900. H. LITTLEWOOD.

THE DURATION OF THE INFECTIOUSNESS OF DIPHTHERIA.

To the Editors of THE LANCET.

SIRS,—I should be glad of your opinion as to when a case of diphtheria ceases to be infectious. I take it that if there are no true Klebs-Löffler bacilli to be found on bacteriological examination, then the usual post-card may be sent to the sanitary authority stating that infection has ceased and the house may be disinfected and isolation withdrawn. Again, is it advisable in all cases to have a second bacteriological examination for a negative result?

I am, Sirs, yours faithfully,

Nov. 5th, 1900. T. W. HEYWOOD, M.R.C.S. Eng., D.P.H.

*** It is difficult to state with any exactitude when a case of diphtheria ceases to be infectious. Klebs-Löffler bacilli have been stated to have been detected in the mucus of the pharynx six months after the primary attack. As a general rule if six weeks after the disappearance of the membrane no Klebs-Löffler bacilli can be found the usual post-card may be sent. A single examination may as a rule be accepted.—ED. L.

"PNEUMOCOCCIC PERITONITIS."

To the Editors of THE LANCET.

SIRS,—Your annotation in THE LANCET of Nov. 3rd (p. 1290) upon pneumococcic peritonitis and the remark that it does not often attract attention in England suggested the following brief reference to two cases which have come under my notice. A girl, aged eight years, was admitted into the Bristol Royal Infirmary in 1899 with acute peritonitis of five days' duration. Abdominal section was performed but no cause for the peritonitis was discovered. She died the following day and at the necropsy no lesion of the abdominal or pelvic viscera or in the bones could be found from which the suppurative inflammation of the peritoneum present could have originated, neither was any septic focus discovered elsewhere in the body. Cover-slip preparations of the pus showed encapsuled diplococci associated with streptococci, and cultures showed the presence of the diplococcus pneumoniæ. In February of the same year a girl, aged 17 years, died in the infirmary from lobar pneumonia complicated by pericarditis. In this case acute peritonitis of a milder type was also present.

I am, Sirs, yours faithfully,

Nov. 6th, 1900. THEODORE FISHER.

"THE ETIOLOGY OF RHEUMATIC FEVER."

To the Editors of THE LANCET.

SIRS,—The letter of Dr. F. J. Poynton and Dr. A. Paine published in THE LANCET of Nov. 3rd, p. 1306, at length does justice to the early observations of British practitioners in the bacterial origin of rheumatic fever, and admits Dr. Alfred Mantle's claim to the honour of being the first to give optical demonstration of the micrococci of rheumatic fever. That Dr. Poynton and Dr. Paine do not corroborate my observations of the existence in the blood of vast quantities of these micrococci at the onset of the disease is also definitely enunciated; it will be my duty to exhibit my proofs at the Pathological Society at the earliest opportunity possible. The stimulus given by the valuable observations of Dr. Poynton and Dr. Paine will no doubt speedily put us in possession of the true facts concerning the origin of this destructive disease.

I am, Sirs, yours faithfully,

Southwick, Nov. 5th, 1900. EDW. F. GRÜN.

THE TERM "INFLAMMATION" AND THE SUFFIX "ITIS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Nov. 3rd (p. 1288) there appears a paragraph in which, referring to the suggestions of Dr. A. H. Smith of New York, you appear to advocate the disuse of the term "inflammation" and the suffix "itis." May I be allowed to point out a few objections to this course which seem to me to be insuperable? 1. The nomenclature suggested is to be formed by adding the suffix "osis" to the name expressing

the agent that causes the disease, but it is not stated how we are to apply this suffix to names such as, for example, "staphylococcus pyogenes aureus" and "bacillus coli communis." 2. A name which has an etiological significance cannot describe a pathological process or an anatomical condition. For instance, the term "traumatosis of bone" will not tell us whether we are concerned with a bruise, a fracture, or a periostitis. 3. If we are to have an etiological nomenclature instead of an anatomical one, we shall not only have to drop the term "inflammation" but also many other terms, such as "fracture," "abscess," "hypertrophy," &c. 4. If a purely etiological nomenclature is adopted it will have the effect, contrary to the statement in the paragraph referred to, of diverting the attention from the patient to the disease, since it will imply that the only cause of the disease is that which is expressed in the name, and that, in consequence, the only method of treatment is to remove this cause, whereas many of the most successful methods of treatment at present in use have for their object the improvement of the general condition of the patient so as to enable him to combat the disease. 5. Inflammation is a distinct pathological process, as distinct, in fact, as hypertrophy or atrophy, and has a definite object, and that object is to remove or neutralise the irritant. If this fact were properly appreciated it would be an immense advantage to medicine. 6. If we are to do without the term "inflammation" and the corresponding suffix "itis," how are we to describe a condition like fibrinous pericarditis, since exactly the same condition may be caused by many different causal agents? Lastly, the term "tuberculosis" is cited as a precedent. Surely a more unfortunate precedent could not very well have been found. The name "tuberculosis" was given to a disease which was characterised by a definite anatomical lesion—the "tubercle." Since the discovery, however, of the tubercle bacillus the term has been divorced from its anatomical (and true) meaning and now has a purely etiological significance, with the result that diseases which would have been rightly included in the old sense of the term are now assigned the unsatisfactory term "pseudo-tuberculosis," and the form of inflammation which used to be called "tubercular" is now termed "nodular." Similarly, if other terms are altered in the same way and an etiological nomenclature is adopted we may expect a like confusion to be the result.

By all means let us have an etiological nomenclature and, if necessary, let us apply the terms "traumatosis," "streptococcosis" (not "traumosis," "streptococosis") to diseases caused by the respective agents, but this system can never replace an anatomical nomenclature such as is implied in the suffixes "itis," "oma," &c. Both systems are necessary, but neither can take the place of the other.

I am, Sirs, yours faithfully,

CHARLES POWELL WHITE, M.D. Cantab., F.R.C.S. Eng.

Medical School, Leeds, Nov. 6th, 1900.

THE ETIOLOGY OF CANCER.

To the Editors of THE LANCET.

SIRS,—A patient of mine is thinking of investing a sum of money for the purpose of stimulating investigation into the etiology and cure of cancer. Would some of your readers kindly assist by giving their ideas on the subject?

I am, Sirs, yours faithfully,

Nov. 6th, 1900. T. S. F.

NOTIFICATION OF PHTHISIS.—At the meeting of the Bath Sanitary Committee held on Oct. 29th the sub-committee recommended the voluntary notification of phthisis, with the usual fees for such notifications.

MUNICIPAL ELECTIONS AND MEDICAL MEN IN THE WEST OF ENGLAND.—As the result of the recent municipal elections Mr. Colston Wintle, M.R.C.S. Eng., L.R.C.P. Lond., was elected at Bristol; Mr. W. Hadwen, M.D. St. And., L.R.C.P. Lond., M.R.C.S. Eng., at Gloucester; Mr. G. A. Rae, L.R.C.P., L.R.C.S., L.M. Edin., J.P., at Devonport; Mr. Elgar Down, L.R.C.P. Lond., M.R.C.S. Eng., at Stoke, Plymouth; Mr. E. J. Domville, L.R.C.P. Lond., M.R.C.S. Eng., at Exeter; Mr. G. M. Winter, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H. Camb., at Torquay; and Mr. R. V. Sutton, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., at Newport, Mon.

THE UNIVERSAL EXHIBITION OF PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

(*Continued from p. 1311.*)

THE PASTEUR SALOON.

THERE was a hitch with regard to the French sanitary exhibits. In the various financial calculations made no special credit was voted for a French sanitary section. This gave rise to protests, prolonged negotiations, and loss of time. But beyond the fact that this occasioned a regrettable delay the question was finally settled in a satisfactory manner. The money was forthcoming and a special building was erected on the banks of the Seine, opposite the Press Pavilion and at the extreme eastern end of the gallery for the Army and Navy exhibits. Thus, by a sort of logical sequence, the French sanitary section merges into the French military, medical, and ambulance services which precede the purely military exhibits. The building commences with an ornamental tower. The circle is divided into four parts and in the centre there is an ornamental case surmounted with the bust of Pasteur. This, the Salon Pasteur, conveys in a small space and in compact form instructive indications of some of the most beneficent discoveries of the nineteenth century. In the centre there are relics of the great investigator and teacher. Here are the instruments, the flasks for culture broths, the microscopes, the now old-fashioned and very simple implements with which Pasteur himself worked, which he handled for many long years and to such good purpose. The bottles which he had filled and re-filled stand there as silent motionless witnesses. And there are little bits of paper, so insignificant in themselves and yet so eloquent, for on these Pasteur, with his own hand, rapidly scribbled down the simple unpretentious record of his laboratory observations. They relate to his studies on rabies. It is easy to note with what method, deliberation, tidiness, and order this master-mind proceeded in his investigations. First there is the indication of the method to be followed, then underneath, in a very small, neat, and legible handwriting, there is a brief account of the results of the experiments, of the fate of the inoculated animals and their symptoms, and then, well detached from the rest, are the conclusions arrived at.

The case under the bust of Pasteur is placed horizontally so that the visitors can bend over the glass and examine the contents of its eight compartments. Here the whole work of Pasteur is set forth as it were in eight chapters. In the first compartment there are models of crystals made by Pasteur himself, labeled with his own handwriting, and some of the crystals themselves in the very bottles where he placed them many, many years ago. In those days he was studying pure chemistry and established the existence of asymmetric arrangements. From this grew the idea that the molecules formed in space a geometric body with three dimensions. The study of this crystallisation led to the study of ferments and to the discovery that ferments were living organisms. This phase is shown in the second compartment. Then comes the contest against the believers in spontaneous generation set forth in the third division. Here the little balloon-shaped bottles show the proofs given by Pasteur, for there is also his apparatus for purifying the air by heat and method of filtering it, so that no fermentation took place when the air was sterilised. Then there are bottles which were opened on the summit of the Montanvert in 1860 and which to this day remain perfectly sterile. The next two compartments show how these discoveries were applied to the preservation of wine and to preventing the spread of disease among silkworms. The sixth compartment deals with the germs of the atmosphere and here is the very simple, almost rudimentary, but effective apparatus which Pasteur devised so as to destroy all living organisms in the atmosphere. Pasteur was now beginning to study animal pathology and then he took up the discovery of the bacteria of anthrax, made in 1850 by Devaine and Rayer, and in the seventh division is shown how this idea of the living virus was applied to other diseases. Here are test-tubes containing the blood of animals suffering from anthrax and the method of isolating and of attenuating the virus. Here is a rabbit inoculated with rabies, the spine being exposed; there are specimens of anti-rabic vaccine,

and among these samples of the way these studies were pursued is the following laconic note: "Number of cases treated in 13 years, 21,631; died, 99; mortality percentage, 0·45." Over these glass cases crowds of people bend reverently. They look at the strange things here shown, in themselves so little to look at, and they try to understand. Peasants from the country in their native costumes, simple town and country folk, most of them quite ignorant, utterly unable to grasp the meaning of what they see, and yet all spellbound by the word written above—Pasteur. It is astonishing how long they will tarry, how they will strain to read some inscription, striving, longing to understand; and then how grateful they are if anyone is able and ventures to give a little explanation. The explanation, however, must be brief or there would soon be such a crowd as to cause serious inconvenience. It is indeed an edifying sight to see daily these crowds of poorer visitors, simply dressed, but always neat and tidy, throng into the Pasteur Saloon. Perhaps no better homage could have been rendered to this great *savant* than the sincere respect shown by the masses for his noble work. However vague their conceptions of bacteriology they displayed wonderful interest and anxiety to know more, and it does credit to the French people that so many of the poorest classes should care to tarry so long in this highly scientific section of the Exhibition.

On each side of the main entrance there are shelves loaded with bottles. These contain gelatin in which colonies have been planted so as to form designs. Some are red, others are yellow or violet, and spell out the names of Pasteur's pupils, such as Roux, Chamberland, &c. These microbe cultures are not repugnant in appearance, some of them, are rather pretty like mushroom growths, and yet they represent pneumonia, plague, cholera, tuberculosis, and other diseases. Then there is a case containing illustrations of the researches of Behring and Roux on diphtheria, and Calmette's anti-venom serum for the bites of reptiles and vipers. The latter come from the Pasteur Institute of Lille.

FOREIGN NATIONS IN THE PASTEUR SALOON.

The idea was to collect from all nations whatever testimony was available to show the results of the applications of Pasteur's theories in these various countries. This, however, was undertaken too late, so that the response has been incomplete. Nevertheless, those nations that have answered the appeal were sufficiently numerous to constitute a fairly good exhibition. On entering, and to the left, there is the exhibit that Austria has sent. This comprises fine large photographs of bacteria from the Hygienic Institute of the Vienna University. These include full details of the five cases of plague that recently occurred at Vienna. There are photographs of the patients showing the buboes, two of which have ulcerated. The Sero-therapeutic Institute of Vienna and the Anti-rabic Institute at the Rudolfstiftung Hospital also send specimens. There are many large coloured photographs and drawings of the microbes of plague and statistics as to the immunisation of horses, plans of hospitals, and the means employed for preparing serum, vaccine, and the like. Immediately opposite Germany has a splendid exhibit and the wooden model of the Gesundheitsamt has gained the Grand Prix. Here are a great number of statistics and various methods by means of coloured cubes and cones for showing how epidemic diseases have decreased by the use of antitoxin, vaccine, and similar preparations. Thus two brown cones marked D represent the reduction of deaths from diphtheria observed in Germany since the introduction of anti-diphtheritic serum. During the years 1892 and 1893 in the six states contributing to these statistics 113,259 children from one year to 15 years of age died from diphtheria. Then began the use of anti-diphtheritic serum, and in spite of the increase of population the deaths from diphtheria among children of these ages during 1896 and 1897 only amounted to 45,942. Thus the height of the two cones, which have the same diameter at the base, is in the proportion of 7 to 3.

The third side of the room contains the information forwarded from Italy and Switzerland. This includes a large map indicating the distribution of malaria over the Italian peninsula and enlarged photographs of the mosquito that conveys the germ. There are also charts showing for each month of the year the quarters of Rome that are most affected by malaria. Tables indicate how the use of antitoxic serum has increased in Italy and that the total mortality, which for the entire kingdom amounted to 29·5 per 1000 of the population in 1887, was only equal to 22·2 in 1897 and 23·1 in 1899. Switzerland sends photographs of the popular sanatorium for the treatment of tuberculous patients at Heilingenschwendi and diagrams showing the mortality from phthisis at various ages. The maximum number of deaths among females from this cause occurs from 14 to 19 years of age, while among males it is from 20 to 30 years of age. Then there are very good coloured maps indicating the prevalence of different diseases in various parts of Switzerland, including phthisis. From these it will be seen that from 1876 to 1886 there was an average of 53 deaths per annum per 100,000 inhabitants of the large towns caused by typhoid fever, and that the proportion for all Switzerland, including the towns, was 37 per 100,000. From 1896 to 1899 the proportion of deaths from typhoid fever was only 11 for the large towns and nine for all Switzerland per annum per 100,000 of the population. Undoubtedly these are figures that will not fail to encourage nervous tourists.

TYPHOID FEVER IN FRENCH TOWNS.

On the fourth side of the Pasteur Saloon the French Ministry of the Interior exhibits equally interesting diagrams. They also show how typhoid fever has been reduced in the towns of France which have more than 30,000 inhabitants. One of the worst among these towns is that of Havre. Here the deaths from typhoid fever were equal to 180 per 100,000 per annum from 1886 to 1890. The proportion fell to 140 per 100,000 from 1891 to 1895 and to 40 from 1896 to 1898. The other towns that stand high on the list are Lorient with 200, 70, and 90 deaths per 100,000 population per annum for the three same periods—namely, from 1886 to 1890, from 1891 to 1895, and from 1896 to 1898. Calculating in the same manner for the same periods there were 70, 50, and 100 deaths annually from typhoid fever at Troyes; 140, 30, and 40 at Angoulême; 50, 30, and 30 at Nice; 60, 100, and 90 at Toulon; and 80, 50, and 60 at Marseilles. The towns of Cette, Béziers, Perpignan, and Toulouse are about as bad; but, nevertheless, these diagrams as a whole show a general reduction in the prevalence of fatal cases of typhoid fever. There are similar tables given dealing with pneumonia, acute bronchitis, diphtheria, and other diseases. The two first mentioned remain about stationary, but there is an immense reduction in the death-rate from diphtheria, and the result for many other diseases is eminently satisfactory. Such is the general character of the exhibits in the Pasteur Saloon. They constitute a well-deserved tribute to the great French *savant*, and it is only to be regretted that other nations were not able to contribute their quota of information.

Paris, Nov. 4th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool School of Tropical Medicine: Return of Dr. H. E. Annett from West Africa.

DR. H. E. ANNETT, of the Liverpool School of Tropical Medicine, returned to Liverpool last week after a tour of investigations in West Africa extending over eight months. Dr. Annett studied the conditions of tropical diseases over an area embracing 1000 miles of the coast, extending his researches to Lokoja on the river Niger. He has accumulated a mass of observations on the relations between malaria and the situation, the geographical peculiarities, and the temperature. In the main these data bear out the theory already established by the inquiries of Major R. Ross, late I.M.S., and Dr. R. Fielding-Ould that malaria is disseminated by the anopheles mosquito.

University College, Liverpool: Old Students' Association.

The first annual dinner of the Old Students' Association was held on Oct. 27th, Dr. John Hill Abram, the president, being in the chair. The toast of "The Association" was proposed by Principal Dale, who cordially welcomed the association as a means of maintaining the active interests of old students in the welfare and development of University College. Dr. Abram, in reply to the toast, said that the progress already made in the organisation of the affairs of the association and the number of members enrolled were most encouraging. He emphasised the necessity for a students' union and club-house to which old students might resort

when revisiting the college. He also expressed the hope that at no distant date Liverpool would have a university of her own, thus identifying her students with the city.

Municipal Eccentricities.

The mode of procedure of the Selection Committee of the City Council has given rise to much comment both in the lay press and in medical circles. Among the new members elected to the City Council on Nov. 1st were Mr. William Permewan, a Doctor of Medicine of the London University, a Fellow of the Royal College of Surgeons of England, and a Diplomate in Public Health of the University of Cambridge; and Mr. Muirhead, a respectable fish and poultry dealer. As Dr. Permewan had defeated a member of the Health Committee his name was proposed to fill the latter gentleman's place on the committee. Dr. Permewan's friends were coolly informed by Alderman Petrie, who took a leading part in the management of the affairs of the Selection Committee, that Dr. Permewan must begin at the bottom of the ladder and abide his time for a seat on such an important committee as that of public health. The hollowness of this statement is revealed by the fact that Mr. Muirhead, also a new member of the council, was placed on the Health Committee to the exclusion of Dr. Permewan whose admitted knowledge of matters connected with public health would have been a needed accession of strength to the deliberations of that committee. The whole proceedings may be summed up as childish in the extreme, and evincing little regard by the Selection Committee for the public weal.

Medical Visitor of Licensed Houses in Lunacy.

Dr. James Barr, honorary physician to the Royal Infirmary, has been re-appointed by the city justices medical visitor of licensed houses for the reception of lunatics within the city of Liverpool in pursuance of the Lunacy Act, 1890.

The Royal Albert Asylum, Lancaster.

The thirty-sixth annual report of the central committee stated that there were 593 patients in the institution, 265 belonging to Lancashire, 166 to Yorkshire, 54 to Cheshire, 49 to Durham, 28 to Cumberland, 13 to Westmoreland, 13 to Northumberland, and five to other counties. The general income had been well sustained, the principal items being maintenance account £21,683, sustentation fund (endowment) account £5256, and extension fund £10,935, including the Ashton Wing. The munificent donation of £10,000 from Lord Ashton had been devoted to the building fund of the new wing. During the year £2962 had been collected by the several ladies' associations. The Ashton Wing will accommodate 100 additional patients. There had been 74 admissions during the year, 58 discharges, and 11 deaths. The average number resident had been 594. The patients admitted were not below the average in intelligence and physical condition of the patients previously received. The asylum is not a mere asylum in the sense of being a refuge and home for hopeless cases, but a training institution aiming to develop the dormant physical and mental powers of the inmates, to improve their habits, to cultivate their moral and religious feelings, and to train them in some useful industrial occupation, so that when leaving the institution they might be less burdensome to their friends, and, if possible, contribute something towards their own maintenance. An alteration in the title of the institution was approved, adding the explanatory sub-title "A Training Institution for the Feeble-minded" as an affix to "the Royal Albert Asylum."

Proposed Sanatorium in Flintshire for Phthisis.

It is proposed to erect a sanatorium in Flintshire for the treatment of patients suffering from phthisis. The scheme owes its inception to Mr. W. J. Crossley of Manchester, who, it is understood, will not only erect the buildings at his own cost, but will also endow them. The locality selected lies between Halkin and Rhydymwyn on the estate of the Duke of Westminster, near Moel Gaer, a commanding mountain. The scheme provides for the erection of a large central residential building for the patients and a number of small bungalows on the south-west slope of Moel Gaer, to which the patients will proceed in the daytime in order to gain the full benefit of the pure mountain air. It is also proposed to plant the place throughout with pine trees, another essential to the treatment of tuberculosis on the open-air system.

Death from eating Putrid Meat.

Mr. J. C. Bate, coroner for West Cheshire, recently held an inquest into the circumstances affecting the death of a police-constable who died during the previous week in consequence, it is alleged, of having eaten some diseased meat whilst engaged on special duty with other constables at Altrincham during the election. The deceased partook of some beef which some of the constables alleged was tainted. The deceased became ill that night and complained of pains in the region of the stomach. Mr. A. H. Godwin of Liscard was called in to see him on the following morning, Oct. 12th, and found him suffering from symptoms of irritant poisoning. Peritonitis subsequently supervened from which he died on Oct. 18th. Evidence was given by the caterer of the meat that the joint, being a large one, was put into the oven on the afternoon that he received it (being apparently perfectly sound) and partly cooked. It was then taken out and left to cool and at midnight it was put into an ice-chest where it remained all night. Next morning it was cooked finally and at noon it was sent away to be served to the constables. A second constable, who had also partaken of the beef, became suddenly ill but recovered. No ill effects from eating the meat had resulted to the remainder of the constables. The jury found a verdict that "Death was due to peritonitis caused by eating putrid meat." They were of opinion that the method of cooking and cooling the meat was at fault.

Nov. 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Health Society.

THE opening lecture of the present course of lectures of the Edinburgh Health Society was delivered on Saturday night in the Oddfellows' Hall, Forrest-road, by Dr. Leslie Mackenzie, medical officer of health for Leith. The subject of the lecture was "Public Health and Individual Duty." Dr. Mackenzie considered what the meaning of the public health movement was, pointing out that it was essentially an ethical service based on the principle that to forward human happiness was human duty. He considered that the fundamental doctrine in the theory of public health was that man was capable of variation of growth, of development, and of integration. Man gained in strength as he gained in opportunity, and to free him from entanglements was to lessen for him the burden of his inheritance of evil and to strengthen for him the gift of his inheritance of good. And that was the ultimate ground of public health practice, which claimed primarily at clearing the way for the free development of the human organism.

A Proposal to Appoint a Port Medical Officer for Glasgow.

At a meeting held in the National Hall, Gorbals, on Monday last, in the interests of a candidate for the representation of one of the municipal wards of the city, Dr. Thomas Colvin, who presided, made special reference to the recent visitation of plague and advocated the appointment of a port medical officer in Glasgow with duties similar to those of Dr. W. Collingridge in the Port of London.

Aberdeen University.

The fifth annual meeting of the Aberdeen University Students' Union was held in the debating hall, Marischal College, on Oct. 27th. A satisfactory report on the finances was submitted. Major Manuell (medical) has resigned the office of president, as his connexion with the University as a student is to cease. Mr. G. O. Gould was appointed as his successor and other office-bearers were also elected.—The University Choral and Orchestral Society have elected Professor Japp, LL.D. (chemistry), as president for the ensuing year. Eight bursaries from £22 10*s.* to £18 per annum have been allocated to medical students.

Nov. 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Abattoir Reform in Dublin.

THE Corporation of Dublin a short time since sent two of its member Mr. Kennedy and Mr. Clancy, to

visit Hamburg, Munich, and other towns in order to inquire into the working of Podewill's system for the destruction of slaughter-house offal. Their report is of interest, more especially when one recalls the justly adverse criticism of the slaughter-houses of Dublin by the Sanitary Commissioner of THE LANCET who visited the city some months ago. The offal-utilising method followed in Munich is described as a source of considerable profit to that municipality, the fat being sold for 22*s.* per cwt. and the manure at £5 per ton. Dresden, which boasts of having the most perfectly equipped abattoir as yet constructed, was visited, and the details of the Podewill system as used there are fully described. To put the matter shortly, the offal from diseased and slaughtered animals is—after the fat has been removed automatically—reduced to a powder which is found to be valuable as a food for pigs and fowls. To equip the city abattoirs in Dublin with the Podewill apparatus will cost about £5000. The writers of the report allude to the precautions taken by the municipal authorities in continental towns against the sale of infected meat. There are no private slaughter-houses and no meat is permitted to be exposed for sale unless it bears the brand of the public abattoir at which it was killed and dressed.

Dublin Sanitary Association.

The council of the Dublin Sanitary Association met on Nov. 1st, and received a letter from Sir Charles Cameron stating that the Public Health Committee had recommended the Municipal Council to make tuberculosis of the lungs a notifiable disease for one year as a tentative measure.

Return of the Staff of the Irish Hospital from South Africa.

The Royal College of Surgeons in Ireland has decided to entertain Sir William Thomson and his colleagues of the staff of the Irish Hospital at a dinner to be given in the College on Nov. 24th.

City Hospital for Diseases of the Skin, Dublin.

The first annual meeting of the friends and supporters of this hospital was held at the institution on Nov. 1st. The meeting was large and enthusiastic. Letters of regret for non-attendance were received, inclosing cheques, from many representative citizens. Sir Francis Cruise, consulting physician to the hospital, was unable, owing to an urgent professional call, to be present. Mr. Thomas Myles, President of the Royal College of Surgeons in Ireland and consulting surgeon to the hospital, Sir Charles Cameron, and Mr. A. H. Jacob were also, owing to a council meeting at the Royal College of Surgeons in Ireland at the same hour, unable to attend, but they bestowed upon the meeting their imprimatur; Dr. C. M. O'Brien, physician to the hospital, epitomised the work of the institution during the year. 2000 patients had been registered, of whom many were cured and all were relieved. He said that the expenditure exceeded the income from all sources during the year and in this the governors had the sympathy not only of the meeting but of the citizens at large. Dr. G. B. White, surgeon to the hospital, concurred with his colleague Dr. O'Brien. Alderman Ireland, J.P., representing the corporation, warmly approved of the objects of the hospital and the good work done there. He himself would be in favour of giving a grant from the corporate funds and he felt sure that when the good work of the institution was made known to his fellow-members they would support him.

The Belfast Union Fever Hospital.

As anticipated in THE LANCET of Oct. 27th, p. 1240, Dr. A. G. Robb has been appointed physician to the Belfast Union Fever Hospital in place of Dr. E. C. Bigger, who has been appointed Local Government Board inspector.

Queen's College, Belfast.

The following medical scholarships, &c., were awarded at the examinations held at the commencement of the session in the above college. Fifth year: Medicine and pathology, Albert Lytle Black, B.A.; surgery and midwifery, David M'Mordie, B.A. (John Armstrong, a prize.) Fourth year: Henry Mulrea Johnston and Sydney Herbert George Blakely. Third year: Thomas Lyle and Daniel Gillespie. Second year: William James Wilson and Robert James Spence. First year: Literary, James Stuart Dickey; science, Robert Jamison.

Ulster Medical Society.

The first meeting of the session 1900–1901 was held on Nov. 1st in the Belfast Museum. Professor J. W. Byers, ex-President, occupied the chair, and after the minutes were read he introduced the new President, Professor W. H. Thompson of Queen's College, Belfast, who delivered his inaugural address. After thanking the members for electing him Dr. Thompson gave a most interesting account of recent advances in our knowledge of normal digestion, based largely on the work done in Pawlów's Laboratory in St. Petersburg. In conclusion, Dr. Thompson regretted the inadequate teaching of students in physiological chemistry and spoke of the meagre attempts made by the English nation to provide laboratories for the study of such subjects as were being constantly investigated in kindred institutions in Europe and America. Professor J. A. Lindsay, in proposing a vote of thanks to the President, referred to the excellent laboratories which he had visited in the Johns Hopkins University in Baltimore. Dr. Dempsey, J.P., seconded the vote of thanks, which was acknowledged by Dr. Thompson. A report from the council in reference to the publication of the Transactions having been considered it was arranged that the annual dinner should be held on Saturday evening, Feb. 23rd, 1901.

Health of Belfast.

In a report presented to a meeting of the city corporation on Nov. 1st it is stated that the death-rate for the week ended Oct. 6th had been from all causes 18·9 per 1000, and from the principal zymotic diseases 3·5. In the corresponding period of last year the general death-rate was 26·1 per 1000 and that from zymotic diseases 4·5. The deaths from zymotic diseases, as also those from chest affections, are much less numerous than they were in the corresponding period of last year. Both in the number of cases of typhoid fever notified, as well as in the mortality, the disease seems to have subsided into the ordinary endemic condition which appears now to be a constant factor in Belfast.

The Irish Medical Association.

On Nov. 1st a meeting of the members of the Irish Medical Association residing in co. Antrim and co. Down was held in the Belfast Museum. Dr. W. A. McKeown occupied the chair, and it was unanimously decided to invite the association to hold its annual meeting in Belfast in June, 1901. The headquarters of the society is in London, but a new departure was made a few years since when the annual meeting was held in Cork, and in the coming year this experiment is to be repeated and the society is to meet in Belfast. The association is largely concerned with looking after the interests of the Poor-law medical officers in Ireland.

The Spread of Infectious Disease.

At a meeting of the Portadown Town Council on Nov. 5th Dr. J. L. Rowlett, the medical officer of health, reported that during the last month there were six cases of scarlet fever notified, one of diphtheria, and one of puerperal fever. He had considerable trouble in isolating one case of scarlet fever. The patient, who was found to be "peeling," was running amongst the children who were attending school, and it was only when presented with a magistrate's order for her removal to hospital that the parents consented to have her properly isolated.

The Annual Dinner of the City and County of Cork Medical and Surgical Association.

The annual dinner of the above association was held in the Victoria Hotel, Cork, on Nov. 3rd. The President (Professor Henry Corby) occupied the chair, and amongst the guests were the Lord Mayor (Sir Daniel Hegarty), Professor Hartog and Professor Stokes of the Queen's College, representatives of both branches of the legal profession, besides several leading citizens identified with the trade and commerce of the city. The first toast was "The Queen," which was duly honoured. Then "The City Corporation" was proposed by the President, who referred to the improved sanitation of the city. The Lord Mayor and Sir John Scott responded and dwelt on the valuable aid which the corporation had at all times received from members of the medical profession when any projects calculated to improve the health of the citizens were under discussion. Sir John Scott, in proposing the toast of "The Cork Medical School," alluded to the brilliant array of medical graduates who had received their training in Queen's College, Cork, and said that not only the medical men of Cork, but the citizens generally, had reason to feel proud of such achievements. Professor Hartog and Professor

W. E. A. Cummins responded, the latter stating that recently when paying a visit to Netley he was astonished on consulting the lists to find that such a very large proportion of army surgeons had been educated at the Cork College. "The Legal Profession," proposed by the President, was responded to by Professor Stokes, Mr. George Crosbie, and Mr. Exham, solicitor. The President, in proposing "The Navy and Army Medical Officers," referred to the invaluable services rendered by these gentlemen in the South African war and said that it was a source of pride to the medical profession to know that the percentage of members of the Royal Army Medical Corps who had won the Victoria Cross was far higher than that of any other branch of the Services. The Lord Mayor in proposing the toast of "The City and County of Cork Medical and Surgical Association" alluded to the advantages conferred by the association on the local members of the profession, and through them on the citizens generally. Dr. Giusani responded in an able speech. Mr. E. W. Allsome proposed the health of Dr. J. J. Tracy, the honorary treasurer to the association, and laid stress on the invaluable services rendered by Dr. Tracy to the profession in connexion with the "battle of the clubs" and said how gratified all were to find that Dr. Tracy was again restored to health. Dr. Tracy responded and referred in grateful terms to the testimonial which had been presented to him when he had been in bad health and said that he valued it highly as an expression of the kindly feelings of his medical brethren. The toast of the health of Dr. R. P. Crosbie, the honorary secretary, was warmly received, and Dr. Crosbie, in reply, said that it afforded him very great pleasure to have had any part in making the evening's proceedings so successful. Mr. P. J. Forde proposed a vote of thanks to the President. Dr. Corby, in replying, referred to the great honour that the association had conferred on him by electing him president for the second time. A pleasing innovation was the presence of two lady practitioners. There were several songs in the intervals between the speeches, and the evening was in every sense a most enjoyable one.

Nov. 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Epidemic Disease in France during 1899.

AT the meeting of the Academy of Medicine held on Oct. 16th M. Laveran read the annual report upon the epidemics which have prevailed in France during 1899. According to him the documents upon which the report is founded are very incomplete. Throughout the departments the medical men employed during epidemics lose heart and are unable to collect sufficient exact information. The colonial reports come chiefly from M. Kermorgan and M. Matignon and deal with the plague in Madagascar and China. The report concluded with the following recommendations. 1. A special commission should be appointed to re-organise the department which has to deal with epidemics. 2. Measures should be taken to insure the accurate declaration of epidemic disease. 3. All mayors should be asked to see that the cause of death is stated on the certificate of death. 4. Schoolmasters and schoolmistresses should at once notify any case of infectious disease among their pupils. 5. They should also insist that no child who has suffered from any infection should be allowed to return to school until after a sufficiently long period of convalescence. 6. Infantile diarrhœa should be tabulated separately from other kinds of diarrhœa in the statistics. 7. Statistics of disease should be regularly kept in every commune and upon one uniform plan. 8. Disinfection should be much more widely used than at present and measures for the same should be able to be taken by those outside the ranks of professional disinfectors. Various other recommendations treated of general hygiene, of the isolation of soldiers suffering from infectious disease, of pure water-supplies, and as to adding to a sum of 300 francs which has been placed at the disposal of the Academy of Medicine to defray the expenses of publications dealing with infectious diseases.

The Aggravation of Cases of Typhoid Fever owing to the Vicinity of a Crèche.

Dr. Renon has recently drawn attention to a remarkable instance of intensification of the virulence of typhoid fever as treated in a hospital. His paper was read before the Hospitals Medical Society and the theory therein put forward is certainly startling, but nevertheless his figures deserve very careful consideration. They dealt with a series of cases of typhoid fever in which the patients were warded next door to a crèche, that is to say, a ward where women were taken in accompanied by their children. Between July 15th and Oct. 1st Dr. Renon had under his care at the Necker Hospital nine cases of typhoid fever, which were distributed between the crèche and the women's ward in the Peter block. Of these nine cases he lost four, or 44 per cent. These women, who were admitted with typhoid fever of a mild form, suddenly developed intense aggravation of the symptoms after about six days. Prostration was intense and they had constant vomiting and refused their food. Of the five patients who recovered only one maintained the mild type of disease, the other four exhibiting the gravest symptoms. These figures could not be put down to the fact that the women were nursing for only three of the nine were nursing and were warded in the crèche while of these three only one died. The six other cases were not those of nursing women and they were not warded in the crèche but in the women's ward. Of these six three died. Treatment, nursing, and a severe type of epidemic could all be excluded, for in the other wards of the hospital where the treatment and nursing were the same, the mortality was very different. Besides, the previous mortality from typhoid fever in the Peter block had been considerable, namely, seven out of 14, or 50 per cent. During the present year up to Oct. 1st, the mortality in this block from typhoid fever had been 11 out of 19 or 57 per cent., while at the same time in the other blocks the mortality among the women was five times less. The Peter block is therefore responsible for this enormous mortality and it is logical to infer that the proximity of sucklings plays a prominent part. Various forms of enteritis are common in the crèche and despite every care it is only natural that the different organisms of infantile diarrhœa exist in enormous numbers both in the crèche and in the adjoining ward. Probably, therefore, the patients suffering from typhoid fever are infected secondarily by microbes from infantile diarrhœa.

Operative Asepsis.

At the meeting of the Society of Surgery held on Oct. 24th M. Walther gave a short account of the researches which he had lately undertaken upon this subject from a bacteriological point of view. The work had been done in the laboratory of M. Widal, in collaboration with him and his assistant, M. Ravaut. The technique was as follows. Bouillons were sown with scrapings from the hands, which had been previously cleansed as follows. They were first soaped and brushed for 10 or 15 minutes in a small quantity of water which previously boiling had been allowed to cool until it could be borne. This water was changed four or five times. The hands were then soaked in alcohol, then in sublimate solution, then again in alcohol, and finally, to remove any trace of sublimate, in a fresh supply of hot water. They were then dried with hot sterilised compresses. Of 19 "sowings" (*ensemencements*) done before the operation and immediately after the washing one only gave any positive result. Of six done during the operation only one gave rise to a culture. Three trials made after the operation gave a negative result. Trials were also made with scrapings from the skin of the patient which gave negative results in five instances and a positive result in one. M. Walther concludes from these results that absolute sterilisation of the hands is possible in the great majority of cases. Indiarubber gloves are most inconvenient, especially as regards movements of prehension, so that, to take an instance, in the operation for radical cure of hernia, dissection of the sac is almost impossible for the surgeon while wearing these gloves.

Nov. 6th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Medical Attachés to German Embassies.

SOME Berlin periodicals, in discussing the possibility of an outbreak of plague in Europe, propose that medical attachés should be appointed to the German embassies abroad and

should be assigned the duty of studying the hygienic conditions of the countries where they happen to be stationed and of promptly informing the German Government of the occurrence of cases of infectious disease. The arrangements should be settled by international agreements and in this way international regulations for the notification and prevention of epidemic diseases might be put on a more satisfactory footing than at present. Precedents already exist for embassies having attachés charged with other than diplomatic functions, because agricultural experts, architects, and engineers have for many years held appointments in connexion with the German embassies in order that they might inform the Government of anything remarkable happening in their respective branches in foreign countries. The position of the medical attachés would be analogous to that of the other technical attachés.

Post-Graduate Instruction.

The civilian members of the medical profession have often felt disappointed when the ample means at the disposal of the Army Medical Department for the post-graduate instruction of army medical officers were compared with the opportunities afforded for the same purpose to the civilian medical officers of health or even to general practitioners. Courses of instruction provided at the expense of the Treasury are available for members of the army medical staff during nearly the whole time of their service and in this way they are kept informed of the progress of medical knowledge. General practitioners, on the other hand, if desirous of engaging in post-graduate study must go to a university during their holidays and pay the rather high fees charged for post-graduate lectures. A wide-spread desire has therefore for a long time been expressed that the Government should establish post-graduate courses free of charge for civilian practitioners and the Government has at last complied. The Minister of Public Instruction has consequently arranged for the delivery of a series of lectures in the Charité Hospital by professors of Berlin University to members of the Berlin medical profession only. The first series was delivered last spring, the subject being Tuberculosis, its Prevention, Bacteriology, Treatment, Complications, &c. The second series has been appointed for October and November and will deal with venereal diseases, including syphilis. The lectures are given in the evening five times a week in order to allow medical practitioners to attend after their day's work is done. That these lectures have really met the requirements of the medical profession was shown by the fact that all the tickets were applied for the day after their issue. In the inaugural address the director of the Charité Hospital pointed out that post-graduate lectures on practical topics like the present were a necessity for the general practitioner, because the increasing amount of medical literature and the great number of new therapeutic methods made it impossible for busy practitioners to keep abreast of the progress of medicine by reading only. Similar lectures will take place in other towns also, so that practitioners throughout the country will have opportunities of improving themselves without being compelled to interrupt their practice and to pay high fees. The above-mentioned official lectures must not be confounded with those of the Association for Post-graduate Study (Docenten-Verein für Ferien-Curse), where everybody is admitted who pays the fees and where opportunities for practical work, examination of patients, operations, &c., are afforded.

A Medical Strike Fund.

A committee of medical men in Leipsic, under the presidency of Dr. Hartmann, has addressed an appeal to all medical practitioners in Germany to unite in collecting a large strike fund. In the letter sent by these gentlemen it is said that the scanty remuneration of the profession in this country is due especially to the dominant position of the sick clubs. These clubs, which in Germany are official institutions, membership of them being compulsory for working people, are in the habit of paying their medical officers very badly and of appointing them on humiliating terms. The complaints against this state of things are manifold and are as old as the present workmen's insurance laws. Many methods for the redress of these grievances have been proposed and strikes have even occurred in different places, as at Remscheid and at Iserlohn. The above committee wish to organise a strike of medical officers to clubs on a great scale, and with this object in view invite medical men to become members of the new medical union. Members are to pay one mark (=1s.) a week, and the leaders of the movement hope to collect a sum of 2,000,000 marks (=£100,000) to begin with. The fund will be used to support members who may be on strike against sick clubs, and, moreover, to pay for advertisements in the medical and non-medical press warning medical men against settling in a place where a strike is in progress. Young men will be advised against the study of medicine by regular communications sent by the union to the press. Apart from the central committee in Leipsic local committees will be formed throughout the country. The system is, in fact, the same as that adopted with great success by the trade-unions, but it is very doubtful whether the organisation of the medical profession is equal to the task of arranging strikes and preventing the clubs from appointing other medical men to fill the vacancies. The appeal of the committee has been received rather coldly by the medical profession, especially in Berlin. The Berlin medical journals doubt whether the strike fund will amount to a sufficient sum and say that other measures have, as far as Berlin is concerned, given better results. They recommend the free-choice system, to which allusion has already been made in the columns of THE LANCET, and they blame the committee for having omitted to mention this system. In a recent communication from the committee the idea of a strike seems in fact to have been placed in the background; the free-choice system is favoured, and the aim of the union is described in more general terms. It is very unlikely that the movement will have any important result and the matter will probably be dropped after a time, like so many other schemes proposed for the benefit of the medical profession.

Nov. 5th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Eliminative and Antiseptic Treatment of Typhoid Fever.

IN my letter in THE LANCET of Oct. 13th (p. 1106) appeared a short item relative to the plan of treatment adopted by Dr. W. B. Thistle of Toronto in typhoid fever of which, in justice to Dr. Thistle, correction should be made in that he does not claim to get rid of bacilli from the intestinal walls. Dr. Thistle has now been employing this plan of treatment for seven years and during that time he has never had a fatal hæmorrhage, any hæmorrhages that occurred having been always very slight, and he has never had any perforations.

Diphtheria in Toronto.

At the present time there is more diphtheria in Toronto than in any of the towns and cities of the province of Ontario, the record for the present year being:—January, 66 cases; February, 60; March, 57; April, 78; May, 50; June, 74; July, 67; August, 74; September, 83; total, 609 cases. Since 1887, when 618 cases were reported, the following has been the number of cases reported to the Health Department:—1888, 498; 1889, 320; 1890, 433; 1891, 1039; 1892, 1625; 1893, 693; 1894, 338; 1895, 506; 1896, 582; 1897, 719; 1898, 426; and 1899, 500. The season has been an exceptionally fine and dry one in Toronto, and Dr. Sheard, the medical health officer, considers that this factor has something to do with the increase this year. In the northern central districts, where the disease is most prevalent, many complaints have been made of the condition of the sewers, sewer-air being plentiful, and this is also deemed to be a contributing cause. Although a recommendation was passed by the Committee on Works this past spring that ventilators should be placed in the sewers to carry the gas up through them, nothing has been done in that direction and as a consequence the health of the community suffers.

Queen's University, Kingston.

Dr. Fife Fowler, who has been for over 50 years connected with the Medical Department of Queen's University, has resigned the professorship of the theory and practice of medicine, but will retain the honorary position of Dean of Faculty. Dr. James Third (Trinity, 1892), late superintendent of the Kingston General Hospital, succeeds Dr. Fowler, while Dr. Haig of Campbellford, Ontario, assumes control of the General Hospital. A by-law was recently submitted to the citizens of Kingston for municipal aid to the extent of $50,000 to Queen's University, which passed by a very large majority. Queen's is said to be ambitious to be raised to the status of provincial university for the eastern portion of the

province of Ontario, and at the next session of the Legislature it will ask the Parliament of Ontario for financial recognition, believing that its capacity can now readily be raised from 500 to 1000 students. Toronto University, which is the provincial university, will oppose granting any aid to its eastern competitor, fearing that it would detract from its own importance and influence in educational matters in the province.

The Morrice Pharmacological Laboratory at McGill University.

Dr. J. T. Halsey, a graduate of Columbia College, New York, has been requested by the Faculty of Medicine of McGill University to take charge of the Morrice Pharmacological Laboratory, which is designed for the purpose of carrying on original research work in that department, and he has accepted the appointment. This laboratory has been equipped by a Mr. Morrice of Montreal, who promises also for the next five years to contribute an annual donation to enable the university to conduct this important work. Dr. Halsey, after graduation, was for one year *interne* at St. Luke's Hospital, New York. He then proceeded to Germany, where he has been for the past five years pursuing studies in the chemical, physiological, and pharmacological laboratories of Freiburg, Strasburg, and Marburg. In October, 1898, he was appointed assistant to Professor Hans Meyer in the University of Marburg, a position which he resigned to accept the offer from McGill University.

Toronto Clinical Society.

At the first regular meeting of this society for the season of 1900–1901, on the evening of Oct. 3rd, Dr. W. H. B. Aikins, the newly-elected president, occupied the chair and delivered the annual address, referring in complimentary terms to the honour which had recently been conferred on one of their number, Mr. I. H. Cameron, by the Royal College of Surgeons of England, and also to the work of Dr. Ryerson as Canadian Red Cross Commissioner to South Africa. Dr. Ryerson delivered a very interesting and able address on the Medical Side of the South African War, dealing principally with typhoid fever and inoculation for it, dysentery, veldt fever, &c. He considered it to be an important fact that in an army of 200,000 men there had not been a single case of small-pox. He eulogised the work of the hospital orderlies whom he thought ought to be commended very highly for their very trying and laborious yet noble work. Dr. G. Silverthorn showed a child of a little more than a year old who in July last had a retro-pharyngeal abscess following upon an attack of measles upon whom he operated through the sterno-mastoid muscle with such signal success that the child was able to leave the hospital completely recovered within one week. Professor H. B. Anderson of Trinity Medical College showed a patient, a young man, aged 23 years, who for 10 years had been the subject of frequent asthmatic attacks and who had had three attacks of right-sided pleurisy. He was shown as having his liver displaced as low as the umbilicus. The interesting point in this case of hepatoptosis is that it was associated with definite asthmatic attacks. Dr. Silverthorn also exhibited specimens showing the course of a bullet-wound in a man who had been shot. The wound of entrance was on the left breast, one and five-eighths inches outside of the nipple line and on a line with the nipple itself. On following this wound backward the bullet was found to have punctured the fifth rib, fracturing it and tearing up a portion of its upper edge, two and three-quarter inches from its junction with its cartilage. It then passed through the pleura and through the anterior angle of the upper lobe of the lung, and then through the pericardium; then along the left border of the heart, which it grooved up and passed on backwards, tunnelling the fat in the auriculo-ventricular groove; then passing out again from the pericardium, backwards through the anterior portion of the lower lobe of the lung, and still backwards into the aorta opposite the ninth dorsal vertebra, with a large amount of hæmorrhage in the posterior mediastinum. The bullet, however, could not be found in any place in that region. An examination of the arteries was then made and the missile was found in the left femoral artery, just below where the profunda femoris is given off. The bullet was a quarter of an inch in diameter. In impinging the posterior wall of the aorta it had perforated that wall, supported behind by the vertebral column, had fallen into the artery and had been carried to its ultimate destination. The specimen of the artery was shown with the bullet *in situ*.

Legislation to Regulate the Sale of Patent or Proprietary Medicines or Cures in the Province of Ontario.

At the last session of the Legislature of the Province of Ontario Mr. W. M. German, one of its members, introduced a measure which at the present time is exciting considerable adverse comment and opposition amongst the drug fraternity of the province. The preamble of the Bill states that it is expedient in the public interest to legislate against the fraudulent or improper advertisement of drugs, medicines, or cures, and against the sale of such of the same as contain harmful ingredients, to license the advertisement or sale of patent or proprietary medicines, to appoint an inspector of the same, and to provide for the payment of licences in respect of the same. Article II. of this proposed measure will provide for the appointment of a "registrar" of proprietary medicines who shall be attached to the office of the Provincial Secretary of Ontario, and who shall be a member of the Ontario College of Pharmacy, regularly qualified, and of at least seven years' standing. The duties of this officer are set forth in detail in Article III. and without being explicit the entire control of the drug trade in this direction would be under his authority. Article V. provides that every application for a licence shall be accompanied by a statement of the formula or prescription of the medicine which shall be duly verified by affidavit. Licences shall cost $1000 and must be renewed yearly. An important section is Article XI. which provides that no person shall advertise any medicine in respect of which a licence has been granted by any surgical picture which would suggest the means of committing any crime, or by any advertisement which is offensive in its language or holds out false hopes of alleviation or cure, or which is misleading in its statement of the curative properties of the drug. An appeal from any decision of the registrar shall be taken to a judge of the High Court of Justice of Ontario within six months from the date of such decision. The measure further provides for fines and penalties. As a most profitable part of the business of a druggist in the province of Ontario consists in the sale of patent medicines and also in the manufacture and sale of preparations of his own, it can readily be seen how the proposed law will bear upon each and every druggist in the province who would be required, under the provisions of this Act, if it became law, to recoup the province to the extent of $1000 for a licence and a similar sum for its renewal annually, and if he wished to sell 10 different formulæ he would be required to pay into the treasury $10,000. It has been interesting to watch the action of the various newspapers throughout the province who profit largely by advertisements of these patent cure-alls. They are standing hand-in-hand with the proprietors of "trade-mark" articles with the object of defeating the Bill, for the framing and pushing of which the Medical Council is charged with the responsibility. The "German Bill" as it is called, is without doubt a good one in certain particulars. It has been endorsed by a leading society paper, which gives the newspapers some pretty hard raps on the character of the advertisements which they are continually inserting, pointing out that some of those self-same newspapers which are foremost in opposition are also first as respects the publication of the offensive advertisements. The patent medicine trade needs regulating in this province, certainly as well as objectionable advertisements, and the suggestion of the *Dominion Medical Monthly* in a recent issue that the time was opportune for the appointment of a medical editor on the staff of the leading dailies to look after medical items which are popular in the press nowadays, as well as to exert an influence in shutting out these disgraceful advertisements, would, if acted on, result in a cleaner lay press in this particular direction.

Toronto, Oct. 22nd.

DEATH FROM ICE-CREAM.—The borough coroner of Plymouth held an inquest on Nov. 1st upon the body of a boy, aged 12 years, who had partaken of four or five ice-creams on Oct. 27th and died on Oct. 30th. A medical witness who had made a post-mortem examination stated that death was due to ptomaine poisoning the result of eating the ice-creams, and the jury returned a verdict to that effect.

Medical News.

THE NATIONAL REGISTRATION OF PLUMBERS: CONFERENCE AT BIRMINGHAM.—The Lord Mayor of Birmingham presided at a public meeting held in the Council Chamber, Birmingham, on Oct. 24th, among those present being Mr. Robert Crawford of Glasgow and Alderman Richard Hind, representing the Worshipful Company of Plumbers; Dr. Alfred Hill, medical officer of health of Birmingham; Alderman Cook, chairman of the Birmingham Health Committee; Alderman Parker, chairman of the Birmingham Water Committee; Mr. John Price, city surveyor, Birmingham; Vice-Principal Heath, of the Birmingham University; Bailie Dick, chairman of the Health Committee, Glasgow; Mr. G. H. Fosbroke, medical officer of health of Worcestershire; Dr. A. Bostock Hill, medical officer of health of Warwickshire; Dr. P. Boobbyer, medical officer of health of Nottingham; Mr. F. M. Williams, medical officer of health of Plymouth; Professor Matthew Hay, Aberdeen; Dr. W. A. Evans, medical officer of health of Bradford; and several master plumbers and operative plumbers representing various associations and the district councils working in conjunction with the National Registration of Plumbers. Previously to the public meeting a conference was held in the Council Chamber under the presidency of Mr. Robert Crawford, at which the following resolutions were passed. It was proposed by the Chairman and seconded by Dr. Alfred Hill:—

That in the opinion of this Conference, representing the public health and water authorities and the master and operative plumbers of Great Britain and Ireland, it is desirable, and would be a great public advantage, if a measure should be passed through Parliament with the object of protecting the public from the results of bad and incompetent workmanship and securing the efficiency and responsibility of plumbers through a system of registration of the qualified masters and operatives; and that it is the duty of the Government, acting in the public interest, to carry through a measure with this object.

It was proposed by Mr. F. M. Williams and seconded by Bailie Dick:—

That 12 representatives of the district councils be appointed to act in conjunction with the company in approaching the Local Government Board for the purpose of framing a scheme for a Plumbers' Registration Bill, and taking such steps as they may deem necessary for such legislation.

It was proposed by Professor Matthew Hay and seconded by Dr. Bostock Hill:—

That this Conference approves of the establishment of two grades of registration, one for operative plumbers, in which the examinations would be essentially a test of workmanship and an oral examination substituted for the present written examination, and the other requiring a higher standard of technical knowledge for master plumbers, inspectors, and plumbers occupying similar positions; and that it be remitted to the company and the representatives of the Conference already appointed to prepare a scheme under this resolution, including the question of fees, and after submitting it to the district councils for their opinion, and finally adjusting it, to put the scheme into operation.

The Lord Mayor in welcoming the members of the conference said he was glad to think that it was many years since Birmingham began to show its interest in matters affecting the public health. When the water-pipes leaked people were anxious about their ceilings and carpets and lost no time in sending for the plumber, but when there was a bad smell they were not so eager to do so. The plumber was not always a popular person, and those who watched him at work were apt to think that his methods were somewhat deliberate. He was a man they could not do without, although he was perhaps the most abused artisan in all the sections of the building trade. The public, it was to be feared, did not appreciate sufficiently the necessity of looking after all those invisible matters which only make themselves known by their odour. Surely, then, it was all the more important to large communities like theirs that the trade on which all that depended should be of the best possible character. It was for that reason that he was there with his colleagues on the Health Committee. Why should it be difficult to get through an Act of Parliament the necessity for which he thought nobody would deny? They could not get it through because it was not a Government matter, and it must be apparent to everyone who had any experience of Parliamentary procedure that by continual working it must be made clear that it was a matter for Government interference. He believed that they had got hold of the right principle and that in time the principle would be recognised in the way they desired.—Mr. Robert Crawford, as chairman of the conference, read the resolutions passed at the conference. He said the plumbers of this country and their public representatives had been engaged during the past 16 years in educating the public, the local authorities, and the masters and men in the trade, and in creating a higher standard of appreciation of knowledge and of responsibility. At the present moment the British plumber stood at the head of his profession in the world. Those who travelled abroad must see that the old insanitary and slipshod methods of the continent were being forced aside. Throughout Europe, in all the most important hotels and institutions and good private houses, the British plumber had been recognised; he had taken possession of the continent from the plumbing point of view, just as his fellow-countrymen had taken possession of most of the unoccupied parts of the earth in other capacities.—Alderman Cook brought forward a motion endorsing the decisions of the conference, warmly supporting its efforts in the interests of the public health, and urging the Government to carry through the Bill for the National Registration of Plumbers.

ROYAL COLLEGE OF SURGEONS IN IRELAND: EXAMINATION FOR REGISTERED PRACTITIONERS.—Mr. William Robert Wilson, L.S.A. Lond., having passed the necessary examination, has been admitted a Licentiate in Surgery of the College.

THE Dental Hospital of London, Leicester-square, has received a donation of £100 and a new yearly subscription of £10 10s. to the "general maintenance" fund and £100 as a special donation towards the amount urgently required for re-building the hospital, from Lord Grimthorpe, Q.C.

SHOOTING A MEDICAL MAN.—Sidney James Kirby, dairyman, was charged on remand at Leicester on Tuesday last with the attempted murder of Dr. Clarke by shooting him with a revolver at Leicester on Oct. 8th. Dr. Clarke, who had recovered sufficiently to give evidence, stated that in 1896 he certified the accused as insane. The accused, who behaved in an excited manner and did not seem to realise his position, was committed for trial.

MEMORIAL TO DR. AUGUSTIN PRICHARD.—On Nov. 1st, at Redland Green Chapel, a window was dedicated to the memory of the late Dr. Augustin Prichard of Clifton. The window contains the figures of St. Luke and St. Barnabas and has a suitable inscription. There was a large attendance at the service among those present being several leading citizens who had held Dr. Prichard in high esteem.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—On Oct. 31st Principal Viriamu Jones, with a deputation from the University College of South Wales, attended the meeting of the Cardiff Town Council and made an earnest appeal for the granting of a free site in Cathays Park for the proposed new college buildings. The college, he stated, had only £50,000 out of the £150,000 which were required, and there was no possibility of obtaining sufficient funds to purchase the site for the sum required by the corporation. After some discussion it was eventually decided that the recommendation of the committee that the college should purchase the site should be referred back for reconsideration.

KENT COUNTY OPHTHALMIC HOSPITAL, MAIDSTONE: RESIGNATION OF MR. M. A. ADAMS, F.R.C.S. ENG.—At a meeting of the board of management of this institution held in September last the resignation of Mr. Adams was received and with great regret accepted. A resolution was passed expressing on behalf of the governors and subscribers their deep sense of indebtedness to Mr. Adams and their appreciation of the assiduous and gratuitous services rendered to them and to the inhabitants of the county of Kent for the long period of more than 37 years, during which time he had been the surgeon to the hospital and upon whom had devolved to so large an extent the conduct of the institution, and to whom are largely due the benefits conferred upon the many thousands who had availed themselves of that free institution. At the following meeting of the board Mr. Ernest H. Cartwright, B.Ch., M.D. Oxon., was appointed surgeon in succession to Mr. Adams. Dr. Cartwright has up to this time acted as assistant honorary surgeon to the hospital.

GLASGOW OPHTHALMIC INSTITUTION: POST-GRADUATE COURSE OF DEMONSTRATIONS ON DISEASES AND INJURIES OF THE EYE.—This course was commenced on Tuesday evening, Nov. 6th, over 50 graduates being present. Dr. A. M. Ramsay took as his subject "Phlyctenular Conjunctivitis" and at the close of the lecture Dr. M. Thomas, medical superintendent of the Glasgow Royal Infirmary, on behalf of the managers, welcomed the members of the profession and expressed his gratification at the increasing interest manifested in these annual demonstrations.

MEDICAL MAGISTRATE.—Mr. T. W. Buckley, M.D. Durh., of Thrapston, has been placed on the commission of the peace for the county of Northamptonshire, on the recommendation of the Lord Lieutenant, Earl Spencer, K.G.

SOUTH AFRICAN HOSPITALS COMMISSION.

Evidence of Mrs. Richard Chamberlain.

THE Royal Commission appointed to inquire into, and report upon, the care and treatment of the sick and wounded in the South African campaign held its final meeting for the examination of witnesses on Monday, Nov. 5th, in one of the rooms of Burlington House. The Commissioners present were Lord Justice Romer, Chairman, Dr. W. S. Church, and Sir David Richmond, and the witness examined was Mrs. Richard Chamberlain.

Mrs. CHAMBERLAIN said, in reply to the CHAIRMAN, that she landed at Cape Town about the beginning of November and left on August 8th. During nearly the whole of the intervening period she was in the vicinity of Cape Town, though she paid a visit to Mafeking and saw the hospital there run half upon the military and half upon the civil system. The hospital to which she paid most attention was the No. 1 Wynberg Hospital. She also paid attention to No. 2 Wynberg Hospital, she twice visited the Woodstock Hospital, and she was shown over No. 3 Hospital. But she only considered herself an authority with regard to No. 1 Wynberg Hospital. She obtained permission from General Walker to visit this hospital. General Walker told her that he had arranged for her to visit it, but when she went she was politely shown the way out. When she reported this treatment to General Walker he said there must have been a mistake, and matters having been arranged, she began to visit the hospital regularly. She got permission to visit three days a week, but as a matter of fact she was there every day. No complaint was made at the time by the principal medical officer, but seven months later after she had reported him, there was complaint. General Walker made no representation to her about the matter, and when the General commanding the line of communications remarked that although the permission was for three days a week she was going to the hospital every day, he added that he supposed they were always glad to see her. No difficulty arose between her and the principal medical officer until some time after Christmas, and the difficulties arose because she had reported him several times to the General, to the Base Commandant, to Colonel Stevenson, and in fact to anybody of authority she could get hold of. The principal medical officer never complained that she gave things to the patients without his knowledge, but she heard indirectly from somebody else, a woman, that it was said she had given buns to enteric fever patients and that she had taken an ice-bag from the head of one patient. These statements were absolutely untrue. She was absolutely sure that she had never given things to the patients without the knowledge of the principal medical officer. When at the request of the principal medical officer she gave a Christmas party to all the patients she forbade the ladies assisting her to hand food to the patients; she said that the orderlies who were in charge of the patients must be the ones to judge what the patients were to have. As far as her own handing of food was concerned she not only looked at the diet sheet before giving anything, even tea, but in addition she used to ask the sister or the orderly. One day somebody sent up to her to say that the Government stores of tobacco had run out and to ask for some of her tobacco. They asked if they could borrow from her. She replied that it was unnecessary to borrow for she would give the men some of her tobacco on the following day; she told the medical officer that she preferred to distribute her tobacco herself. She admitted writing a letter containing this passage: "Surgeon-General be blowed; I am going to give the men cigarettes to-morrow myself." The hospital authorities said she was not to go to the hospital, but all the same she continued to go. She said she would not go inside the hospital unless she was sent for specially by some patient who wanted to see her. She paid three visits after being told not to enter the hospital. They sent a sergeant to her, and she told him to go back to his superiors and say to them that he had communicated to her their orders. As a matter of fact she disregarded their orders and went three times to the hospital—each time in response to a written message from a patient.

The CHAIRMAN: In other words, for reasons of your own, you disobeyed the orders and consequently had to be excluded by an order of Lord Roberts?

Mrs. CHAMBERLAIN: Yes; but surely the reasons are important.

The CHAIRMAN: Now we will go to your personal experiences of the Wynberg Hospital.

Mrs. CHAMBERLAIN said that in the first instance it seemed to her that the whole place was in a most terrible muddle. There was no organisation, and though they had unlimited money and stores at their command the place did not look like a hospital. There was an absence of proper method in regard to the convoys coming to the hospital. The authorities of the hospital ought to have sent down to the station a medical officer of high rank to sort out and to classify the patients so that on their arrival at the hospital they could be put into the proper beds.

Dr. CHURCH: They were sorted when they got to the hospital.

Mrs. CHAMBERLAIN: Very imperfectly.

The CHAIRMAN: You appear to think that you know better than the doctors?

Mrs. CHAMBERLAIN: Yes, I think I know much better than some of these doctors. In reply to further questions by the CHAIRMAN, witness said that they were always short of splints in the hospital. She knew that because she saw people contriving makeshift splints and heard them saying these were all they could get. They were short of every necessary utensil from cups and saucers and plates down to bed-pans and things of that sort. This shortness prevailed all the time. There were no proper air-cushions or air-beds or hot-water bottles or pillows; only the tiny regulation pillow. They were, indeed, short of everything except drugs. They had a very insufficient supply of nursing sisters. When she first went to the hospital, she and a civil surgeon made a calculation and they found that there was one nursing sister to every 175 patients, counting night and day. She could not tell the total number of patients or of nursing sisters, though she had the figures in her notes, but she assured the Commissioners that the proportion she had stated was correct. There were plenty of nurses to be had; it was simply a question of red tape. She considered that after the first rush there were enough orderlies if they had been properly organised and been taught a little about their work. She could have arranged matters differently. She herself provided soups and jellies and air-cushions and pillows.

The CHAIRMAN: They accepted your gifts?

Mrs. CHAMBERLAIN: Yes.

The CHAIRMAN: Did you complain of them for that?

Mrs. CHAMBERLAIN: No, but I complained of the things not being there. She further said that they were even short of soap. There was nothing in the way of chairs or couches on which to put patients and nothing in the way of warm things with which to wrap up patients after sundown when the temperature became very cold. They were short of feeders and tubs and new linen, and utensils for hot water for fomentations. Indeed, it was difficult to keep some of the patients reasonably clean. She had further to complain of the dirt in the place. All the time until the news came of this Royal Commission, the place was swarming with vermin, the floors were dirty, everything smelt a bit, the utensils were not disinfected, and the patients were not properly washed. The buildings were occasionally washed down with dirty water. She did not consider that the walls were dirty, though, of course, the bugs came out of the crevices. The system of night nursing for the orderlies was very bad. The men were posted in batches and put in a tent and each man was supposed to be on duty for two hours. There ought to have been proper night orderlies who were not called upon during the day. In the officers' mess she observed great waste and the absence of proper supervision. She saw napkins used for cleaning knives, crockery knocked about and smashed, and two-thirds of the wine and spirits dealt out for the mess were stolen. The food was improperly cooked and dirtily served. Although the officers had their servants with them they were supposed to be looked after by the orderlies, the servants' duties not being properly defined. She did not make the allegation of theft against the officers' servants; she said that more probably the wine and spirits were stolen by the orderlies. Another complaint she had to make was that while there was any amount of fresh milk to be had around the hospital the patients were very often without it and had to be content with tinned milk. She had seen both officers and men who could not have fresh milk. Another thing she objected to very strongly was that although there were typhoid and other diseases prevalent in the neighbourhood of Wynberg the milk was not sterilised, and her fear always was that diphtheria or scarlet fever might be communicated by the milk. She called attention to the need of sterilisation several times, but later on gave up the business as hopeless. She had seen orderlies take sheets that had been used on the beds of typhoid patients, rinse them through with cold water, dry them, and then place them on beds for new patients. She had no doubt on the point for she had witnessed the whole process. Men who had never been to the front contracted typhoid and this she attributed to want of proper precautions in the hospital. She complained that there was no proper inspection by the military authorities. The doctors were practically allowed to do what they liked. If the general came down he gave several days' notice and she did not consider an inspection was worth anything if notice of it were given. In her opinion the inspection should be made without notice and by somebody outside the Army Medical Department. She objected to drunken army doctors being sent off in charge of convoys. There was a doctor at No. 2 Hospital whom she saw at intervals generally intoxicated for some months, and when he got into a row and was turned out of the hospital he was sent home in charge of transports. There were other cases which she put before Lord Lansdowne and his lordship found them to be true. There were two other doctors who were frequently drunk who were sent home in charge of invalids on transports.

The CHAIRMAN invited Mrs. Chamberlain to write down the names of the three doctors she referred to as well as the names of the transport ships on which they acted.

Mrs. CHAMBERLAIN, while writing, in response to the CHAIRMAN, said that one of the doctors was a very nice young man and she would rather not give his name.

The CHAIRMAN, having received the paper from Mrs. Chamberlain, said there was only one doctor named.

Mrs. CHAMBERLAIN admitted she had only written one name, but she had given the names of the three ships; she could not keep all the names in her head.

Dr. CHURCH: It is a serious charge you are making, that it is the practice to put drunken medical men on transports.

Mrs. CHAMBERLAIN: Yes, it is the practice. When they want to get rid of the drunken medical men they put them on transports. Another thing to which she desired to call attention was the manner in which complaints were received. When complaints were made she considered that they ought to have been more looked into than they were.

The CHAIRMAN reminded Mrs. Chamberlain that the Commissioners were now at the end and not at the beginning of their inquiry that they probably knew more about these matters than she did, and invited her to confine her evidence to matters of her own knowledge and experience.

Mrs. CHAMBERLAIN: You remind me of a counsel for the defence. If I had not known who you were I should have thought you were the counsel retained by the army doctors.

The CHAIRMAN: Quite an erroneous impression, I assure you, Mrs. Chamberlain.

Mrs. CHAMBERLAIN: Well, I think a witness should be assumed to be truthful until she is proved otherwise, and I think you should hear my evidence.

The CHAIRMAN assured Mrs. Chamberlain that he had every desire to be courteous to her and that his only desire was to avoid mere expressions of opinion and to keep the evidence to matters of experience and fact.

Mrs. CHAMBERLAIN, in further examination, said that she had to complain of the manner in which lunatics were treated in the hospital. They had several lunatics and she maintained that they ought to have been put somewhere else and not allowed to go about the hospital and disturb and frighten the patients. One was a young officer of the Royal Artillery who roved all over the place and used to dance into the wards where the most serious cases were, causing great fright and alarm and confusion. This went on for quite a considerable time until he became violent to an orderly and he was removed in an ambulance. She thought the man should have been put either in a small place by himself or in a proper lunatic asylum.

The CHAIRMAN: Do you not think the doctor was a better judge than you of what should be done with a lunatic patient?

Mrs. CHAMBERLAIN: I am sure he was not. One case had a fatal termination. A young Army Service Corps officer came down suffering from a different form of insanity. He was very melancholy and when she spoke to him he said that he was miserable. Once before he had tried to poison himself. In her opinion they did not give him proper supervision in the hospital. They let him wander about, and out of pity she used to take him down to her hut and talk to him and give him something to think about. They took him down to the military sanatorium at Claremont. They gave no warning to the authorities of the sanatorium and he shot himself next morning. All she could say about the Woodstock Hospital was that it was filthily dirty. She considered Wynberg bad, but Woodstock was worse, but that, of course, was before this Commission went out to South Africa. She went to Rondebosch once, and considering that it was a military hospital and run upon a bad system she thought it reflected great credit upon the officer in charge. She was asked to go up to Mafeking by the chief magistrates of the place in order to see the hospital, one portion of which was run on the military and the other on the civil system. The sight was interesting because of the contrast it offered. When she went into the military portion she saw a man who appeared to be dying from enteric fever. She called the sergeant-major, who said, "We think we may just pull him through with great care." By the bedside there was some tinned milk very badly mixed indeed. The patient said he could not drink it, and the sergeant-major said he could not get fresh milk. She moved across to the civil portion of the hospital, where she saw convalescents with great bowls of fresh milk.

By Dr. CHURCH: She had had considerable experience of hospital work in Birmingham and in the Guards Hospital in Rochester-row, but she had never trained in a hospital.

By Sir DAVID RICHMOND: She did not pretend to be qualified to say whether a patient should or should not have tobacco. She always inquired of the orderly which of the men were allowed to smoke by the medical officer. She took care that her distribution did not take the place of theirs and did not clash with theirs.

This closed the examination of Mrs. Chamberlain, and the CHAIRMAN announced that no more witnesses would be called, and that the Commissioners would now proceed to the consideration and preparation of their report.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

AINSLIE, WILLIAM, M.B., Ch.B. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Kington Urban District and Kington Rural District, except the Civil Parishes of Eardisley, Willersley, Winforton, and Brilley.

AYMER, C., M.B., C.M. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Burgh of Inverbervie and the St. Cyrus District of Kincardineshire.

BIGGER, R. C., M.D. Irel., M.Ch., L.M.R.C.P., R.C.P.S. Irel., has been appointed Local Government Inspector, Belfast.

CAMPBELL, JOHN ARCHIBALD, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Demonstrator of Anatomy at Anderson's College Medical School, Glasgow.

DURHAM, FREDERIC, M.B., F.R.C.S., has been appointed Consulting Surgeon to the North-West London Hospital, Kentish Town-road, N.W.

GRANT, LACHLAN, M.D. Edin., has been appointed Parish Medical Officer and Public Vaccinator, Ballachulish and Glencoe; also Certifying Factory Surgeon for the Parish of Lismore and Appin, Argyleshire.

HAM, B. BURNETT, M.D., M.R.C.S., L.R.C.P., D.P.H. Cantab., has been appointed Commissioner of Public Health for Queensland, Australia.

LIGHTBODY, J. H., M.D. Vict., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Urban District of Bexhill-on-Sea.

MACGUIRE, F. J., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Longford Workhouse, vice R. S. Cochrane, deceased.

MACQUARIE, J., M.B., C.M. Aberd., has been appointed District Medical Officer, Wigton Union, vice T. P. Thompson, resigned.

MAUDSLEY, N., M.B., C.M. Edin., has been appointed District Medical Officer, Rothbury Union, vice W. F. Miller, resigned.

MOORHEAD, JOHN, M.A., M.D., has been appointed Consulting Physician to the Royal Hospital, Weymouth.

MUDGE, T., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Hayle District of Cornwall.

O'MEARA, W. H., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Workhouse, Holbeach Union, vice H. R. Harper, resigned.

POLLOCK, R. G., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer for the Croydon Union, vice H. Ross-Todd, resigned.

ROBB, A. G., M.B. Irel., has been appointed Superintendent Medical Officer to the Fever Hospital, Belfast Union, vice E. Cory Bigger.

ROBERTS, ADELINE M., M.B. Lond., has been appointed House Surgeon to the Manchester Clinical Hospital for Women and Children, Park-place, Cheetham Hill-road, vice N. Lomas.

SANDSTEIN, A. C., M.B., Ch.B. Edin., has been appointed Resident Medical Officer to the Gesto Hospital, Edinbane, Isle of Skye.

THOMAS, FRANK G., M.B., B.Ch. Cantab., has been appointed Ophthalmic Surgeon to the Swansea General Hospital.

THOMAS, JABEZ F.R.C.S. Eng., L.R.C.P. Edin., L.S.A., has been appointed Consulting Surgeon to the Swansea General Hospital.

THOMSON, SIR WILLIAM, M.D., M.Ch. Irel., F.R.C.S. Irel., has been appointed one of the Surgeons-in-Ordinary to the Queen in Ireland, vice Sir William Stokes, deceased.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon for twelve months. Salary £100 per annum, with board, residence, and laundry.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES, John Bright-street, Birmingham.—Clinical Assistant.

BRITISH HOSPITAL, OPORTO, PORTUGAL.—Medical Officer. Salary £150 per annum, with liberty to engage in private practice. Apply to the Treasurer, Mr. R. Coverley, 55, Rua da Reboleira, Oporto.

CARDIFF INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £75 per annum, with board, washing, and apartments.

CENTRAL LONDON SICK ASYLUMS DISTRICT.—First and Second Assistant Medical Officer and Dispenser at either of the Asylums at Cleveland-street or Hendon. Salary of the First Assistant Medical Officer £100 per annum, and of the Second £75 per annum, each, with board and residence, for twelve months. Subject to statutory deductions. Apply to the Clerk, Clerk's Office, Cleveland-street Asylum, Cleveland-street, London, W.

COOMASSIE EXPEDITION.—Medical Officers for six months in the colony, with a salary at the rate of £30 a month, and a gratuity on returning to England of ten days' pay in respect of each complete calendar month served in the colony. Free passage to and from the colony and free rations will be provided. Applications to be addressed to the Assistant Private Secretary, Colonial Office, London.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising to £150 by £10 annually, with board, furnished apartments, &c.

GRIMSBY AND DISTRICT HOSPITAL, Great Grimsby.—Resident House Surgeon. Salary £80 per annum board, lodging, and washing.

HAILEY OPEN-AIR SANATORIUM, Wallingford.—Resident Assistant Physician. Salary £100.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £80 per annum, with board, and lodging in the institution.

HOLLOWAY AND NORTH ISLINGTON DISPENSARY, Palmer-place, N.—Honorary Medical Officer.

HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE, Virginia Water, Surrey.—Junior Assistant Medical Officer for the male side. Salary £150 per annum, rising to £200, with board, lodging, washing, and attendance.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London.—Resident Medical Superintendent for one year. Salary 100 guineas, with board and residence in the Hospital. Also Ophthalmic Surgeon.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 a year, with board and lodging.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—Second Assistant Medical Officer, unmarried. Salary begins at £175 per annum, with board, quarters, washing and attendance. Also Third Assistant Medical Officer required in January next. Salary begins at £125, with emoluments as above.

LIVERPOOL DISPENSARIES, Moorfields, Liverpool.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-patient Department, Bowdon, Cheshire. Salary £100 per annum, with board, apartments, and washing.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer for the Convalescent Hospital at Cheadle, for twelve months, unmarried. Salary £150, with board and residence.

METROPOLITAN ASYLUMS BOARD.—Four Assistant Medical Officers at the Fever and Small-pox Hospitals (no vacancy for a Female Medical Officer), unmarried. Salary £160 per annum the first year, £180 the second year, and £200 the third and subsequent years, with board, lodging, attendance, and washing (subject to statutory deduction).—Apply at the Office of the Board, Thames Embankment, E.C.

NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, Regent's Park, London.—Surgical Registrar.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London.—Two fully qualified medical women as House Physician and House Surgeon. Also Clinical Assistant for Out-patient Department for one year.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, London.—House Surgeon for six months. Salary at the rate of £80 per annum, with board, residence, and laundry allowances. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Assistant Surgeon. Also Resident Medical Officer and Assistant Resident Medical Officer for six months. Salary at the rate of £50 per annum with board, residence, and washing.

NOTTINGHAM CITY ASYLUM.—Senior Assistant Medical Officer, unmarried. Salary £200 a year, with board, apartments, and washing.

PARISH OF ST. PANCRAS, London.—Senior Assistant Medical Officer for the Workhouse, for two years. Salary £135 per annum, with residential allowances. Apply to the Clerk to the Guardians, Vestry Hall, Pancras-road, S.W.

PECKHAM HOUSE ASYLUM, S.E.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, &c.

ROYAL ACADEMY OF ARTS, London.—Professorship of Anatomy. Tenable for five years. The annual fee for six lectures and six demonstrations to the students, is, for the lectures £100, and for the demonstrations £22. Apply to the Secretary, Royal Academy of Arts, W.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, Brighton.—Acting Physician.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Assistant House Surgeon for six months. Salary at the rate of £80 per annum, with board, lodging, and washing.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Clinical Assistants for six months.

SALISBURY INFIRMARY.—House Physician, unmarried. Salary £75 per annum, with board, lodging, and washing.

SUSSEX COUNTY HOSPITAL, Brighton.—Resident Pathologist. Salary £70 per annum, with board and residence.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Tisbury, in the county of Wilts; at Haverfordwest, in the county of Pembroke; and at Wishaw, in the county of Lanark.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—House Physician for six months. Honorarium £25, with board and lodging in the Hospital.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

ALLAN.—On Nov. 4th, the wife of Alex. W. Allan, M.D., Wainfleet, Lincolnshire, of a son.

CULMER.—On Oct. 31st, at Chinehurst, Alum Chine-road, Bournemouth, the wife of J. W. Culmer, M.R.C.S., L.R.C.P., of a son.

KEATS.—On Oct. 26th, the wife of William J. C. Keats, Medical Superintendent of Camberwell Infirmary, of a daughter.

KINGDON-ELLIS.—On Oct. 30th, at Lowdham, Notts, the wife of Robert Kingdon-Ellis, M.A., M.B.Oxon., of a daughter.

WALTARS.—On Nov. 3rd, the wife of Dr. F. Rufenacht Walters, of 21, Wimpole-street and Crooksbury Ridges, Farnham, of a daughter.

MARRIAGES.

CHURCHILL—HUBERT.—On the 31st Oct., at St. Mary's, Billingshurst, Sussex, by the Rev. A. H. Barrow, vicar, assisted by the Rev. S. Norman and the Rev. G. H. Torrance, John Aylward, M.R.C.S., L.R.C.P., only son of John Foot Churchill, M.R.C.S., L.R.C.P., of Chesham, Bucks, to Sybil Maude, only daughter of William Henry Hubert, M.R.C.S., L.S.A., of the Brick House, Billingshurst.

CRIMMIN—LENNAN.—Oct. 29th, at the Church of St Joseph, Terenure, by the Very Rev. Terence Anderson, P.P., Major John Crimmin, V.C., Indian Medical Service, to Julia (Juju), only daughter of William F. Lennan and Mrs Lennan, St. Ronan's, Orwell-road, Rathgar, co. Dublin, and granddaughter of the late Major J. J. Poett, Indian Army. No cards.

MARRIOTT—GOCHER. On the 8th inst., at the parish church, Edgbaston, by the Rev. Horatio Spurrier, M.A., vicar of Shildon (uncle of the bridegroom), assisted by the Rev. Canon Cresswell Strange, M.A., vicar of the parish, Hyde Marriott, B.Sc., M.B. Lond., eldest son of the late Joshua Marriott of Stockport, to Emily Katharine, third daughter of Thomas Gocher, of Edgbaston. At home Dec. 5th, 6th, and 7th. No cards.

SWALLOW—ATKINSON.—On Nov. 1st, at All Saints' Church, South Lambeth, S.W., Allan James Swallow, M.B., B.S., of Mount Ergoumbe-gardens, Clapham-rise, S.W., to Elizabeth, elder daughter of the late John Bewley Atkinson, of Chertsey-hill, Harraby, Carlisle.

DEATHS.

ANDREWS.—On Nov. 4th, at Curzon House, Ridgway, Wimbledon, Frederic Foster Andrews, M.D., aged 73 (formerly of) 29, Eccleston-street, S.W.

BARRY. On Nov. 5th, at Westbourne Park-road, Bayswater, Richard John Barry, Fleet Surgeon, R.N., aged 54.

HALE.—On Nov. 4th, at Barrow Hill, Chesterfield, Thomas Frederick Hale, M.R.C.S., aged 74 years. No cards.

HUGHES.—On Nov. 3rd, at Chester-terrace, Regent's Park, London, Alfred William Hughes, F.R.C.S., Professor of Anatomy at King's College London, aged 38.

MORLEY.—On Nov. 2nd, at Hartington-street, Derby, Henry Morley, L.D.S. Eng., aged 73 years.

SHORTO.—On Nov 2nd, at 5, Trinity-road, Wimbledon, James Reeve Shorto, M.R.C.S., L.S.A., aged 64. formerly of Southampton.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A MEMORIAL TO THE GENERAL MEDICAL COUNCIL FROM THE MIDDLESBROUGH AND DISTRICT MEDICAL SOCIETY.

To the Editors of THE LANCET.

SIRS,—Knowing what an interest you take in all forms of medical organisation I should be glad if you will grant me a little space to let you know some of the work that has been done and is being done in this district. Since the formation of our medical society there has been a steady increase in its membership, which now includes every medical practitioner in the town and district with one exception. Much good work has been done in reforming old bad habits amongst us and in raising the standard of medical practice generally. Amongst these reforms (one of the most needed in an industrial town like this) was an unanimous resolution prohibiting members (1) employing collectors to canvass for members for private family clubs, or (2) associating themselves with "canvassing" in any form. This naturally involved the medical men holding appointments under the various medical aid societies in the town and in view of the strong disapproval of the General Medical Council at medical practitioners associating themselves with societies who systematically canvass for members (see resolution, June, 1899), it was unanimously resolved that no member of our society should hold any post under any medical aid society and that all present appointments should be given up. This resolution has been acted upon, with the result that the medical aid societies advertised for and procured the services of a qualified medical man. On the arrival of Dr. X in the town he was waited on by a deputation from our medical society and in a most friendly way was asked to reconsider his action in supporting the medical aid societies here when all the local medical men had expressed their disapproval of those societies. As Dr. X still persisted in his action it was resolved to memorialise the General Medical Council, calling their attention to what, in the opinion of the Middlesbrough and District Medical Society, was a case falling within the terms of their resolution of June 1899. This memorial has now been drawn up and signed by all medical men practising in the town and district and forwarded to the General Medical Council. At the Manchester conference strong disapproval was expressed as to the way in which medical aid societies exploited the services of general practitioners in order to secure members. The ruling of the General Medical Council on this matter was discussed, and it was asked if their disapproval was anything more than a "pious opinion." We were told that no specific case had been brought to the notice of the Council since the resolution bearing on medical aid societies was passed. It is with the object of placing a "specific case" before the General Medical Council that our society has taken this action, trusting that it may be the means of obtaining some decision from the Council which will prohibit general practitioners from associating themselves with this very objectionable form of contract work.—I am, Sirs, yours faithfully,

R. E. HOWELL, M.B. Edin., M.R.C.S. Eng.,
Honorary Secretary Middlesbrough and District
Nov. 6th, 1900. Medical Society.

*** The Middlesbrough and District Medical Society has given to the General Medical Council a test case. The result will be watched by the medical profession with interest.—ED. L.

THE CASE OF MR. JOSEPH HENDERSON MARTIN.

To the Editors of THE LANCET.

SIRS,—A fortnight ago Mr. Joseph Henderson Martin, M.R.C.S. Eng., L.S.A., whilst acting as assistant in charge of a branch colliery practice at Lumley, co. Durham, became insane and through lack of means had to be removed to the County Asylum at Sedgefield. His wife and five young children (ages, 12, 10, nine, six, and four years) are practically destitute, and I venture to appeal on their behalf through your influential columns.

Mr. Martin was a student at the Middlesex Hospital, has filled several assistantships—one at Richmond in Yorkshire, one in Leicester—and for a time he practised on his own account in Huntingdon. He is only 43 years of age, and through no absolute fault of his own has never been in a position to lay by any money. I understand that during the last two years of his life he has been freer from money troubles than he had ever been before, and his income then would be about £200 and a house. Any subscriptions in aid of this unfortunate family would be thankfully received by Dr. W. M. Renton, St. Mary's House, Chester-le-street, or by yours faithfully,

H. LYON SMITH.

The Hawthorns, Chester-le-Street, Nov. 7th, 1900.

THE "MEDICO" TEA INFUSER.

THIS teapot is very ingeniously as well as simply designed in order to place the infusion of tea-leaves under easy control. The space beneath the lid which contains a perforated cup or strainer is occupied by what may be described as a wide dip tube. The tea-leaves are placed in the strainer and hot water is poured in until the level of the water is just above the strainer and the leave

are immersed. There is an annular space around the strainer just beneath the shoulder of the teapot. On pouring in hot water the water traps air in this space after the manner of a seal. Thus the level of the water in the strainer is higher than that in the teapot owing to the imprisoned air. So long as this is so the process of infusion proceeds, but it may be immediately stopped by unscrewing a little air-valve on the shoulder of the teapot. The trapped air then escapes and the water in the strainer sinks and that in the teapot rises until a common level is obtained. At this point, of course, the leaves are left "high and dry" and out of contact with the water. In this way the infusion of the tea may be easily controlled. The device is to be commended since it admits of tea being made correctly with a minimum of trouble; there is no extreme extraction of the pernicious astringent substances of tea-leaves, a delicate wholesome liquor being obtained which may stand for some time without taking up an objectionable excess of tannin. The difference between tea thus made and the tea made in the ordinary teapot and allowed to stand is the difference between tea that is fit to drink, as in the former case, and unfit to drink, as in the latter case. Mr. John Marshall of 5, Sellons-avenue, Harlesden, London, N.W., is the patentee.

HOSPITAL ABUSE, A SIDE THAT IS SOMETIMES OVERLOOKED."

To the Editors of THE LANCET.

SIRS,—The letter of your correspondent "Hospital Surgeon" in THE LANCET of Nov. 3rd (p. 1320), expressing openly, as it does, what are, I believe, the general, though somewhat thinly veiled, opinions of his class, seems to call for some reply from the general practitioners who have been educated and approved by examination by him or such as him. The general practitioner's rôle is stated to consist in "draining" a patient's "fee-paying capacity by a long course of useless medical treatment." He is further taxed with only sending for consultation "the refuse of his practice" or the "patients of whom he is weary or who are weary of him." We are further led to suppose that he has no therapeutic expedient beyond "the usual bottle of medicine." I am not concerned to answer these charges. I only wish to call attention to them as showing the opinion held by a hospital surgeon of those whom he lets loose on society and is thus responsible for. "'It was a thousand pities,' said Corporal Trim, 'though I believe, an' please your honour, that I am going to say but a foolish kind of thing for a soldier.' 'A soldier,' cried my uncle Toby, interrupting the corporal, 'is no more exempt from saying a foolish thing, Trim, than a man of letters.' 'But not so often, an' please your honour,' replied the corporal. My uncle Toby gave a nod." A general practitioner is no more exempt from making a mistake than a hospital surgeon, but not such a tragic one. Is not each class too apt to regard the other as a somewhat blundering rival rather than as a *confrère* practising an equally honourable branch of the profession and equally liable at times to err, in practice, in ethics, in brotherly feeling?

I am, Sirs, yours faithfully,

Nov. 5th, 1900. A GENERAL PRACTITIONER.

A QUESTION OF TASTE AND POLICY.

A (a registered medical practitioner) gives B and Co. a testimonial concerning their beef extract, &c. B and Co. ask permission to publish it and A gives them permission. Has A committed any offence against any law, rule, or regulation either of the General Medical Council or other governing body, either in giving the testimonial or in permitting it to be published?

The above question has been propounded to us by a subscriber and deals with a subject which has often been noticed by us in our columns. We take it for granted that our correspondent is describing the whole transaction and that no money has passed between A and B and Co. in return for the testimonial and that A was not interested in the sale of B and Co.'s commodity. A has not committed any offence against any law or any regulation of the General Medical Council, but what he has done is most inadvisable. On grounds of public policy it is a pity that testimonials should be given which to the censorious will always suggest that they have been given in return for value received, while on grounds of taste it is inadvisable that a medical man should have his name published abroad as an expert in food or allied subjects.

WHEAT GLUTEN FLOUR.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if you or any of the readers of THE LANCET can supply me with the names and addresses of manufacturers in this country of wheat gluten flour.

I am, Sirs, yours faithfully,

Nov. 5th, 1900. R. A. B.

"MOTOR-CARS FOR MEDICAL MEN."

To the Editors of THE LANCET.

SIRS,—If your correspondent "Motor-car" will emerge from the mystery of his *nom-de-plume* and meet me in the correspondence columns of the *Autocar*, where we can more fitly discuss technicalities and thereby relieve you of an interesting, though "foreign," argument, I shall be very pleased to give him any details concerning my experiences that he may wish to have. At the present moment he does not tell me whether he is judging and condemning autocars as a *practical* autocarist, or merely from the point of view of the man in the street. Curiously enough I gave up my horse and trap for the very same reasons that your correspondent hesitates to adopt the more modern mode of locomotion—viz., uncertainty, expense, and general unsatisfactoriness. It used to cost me about 6*d.* per mile in the days of the hay motor, whereas I ran up to London not long ago with another passenger and luggage on board my car for 7½*d.* (40 miles). If your correspondent should happen to be a resident in this town or neighbourhood it might interest him to attend the meeting of our club on Friday, Nov. 9th, when we propose to open a discussion upon the "Most Suitable Form of Motor Vehicle for General Purposes."

I am, Sirs, yours faithfully,

CLAUDE A. P. TRUMAN, L.R.C.P. Edin.,
Honorary Secretary Reading Automobile Club.

Reading, Nov. 6th, 1900.

THE EXTRACTION OF TEETH FOR CLUB PATIENTS.

To the Editors of THE LANCET.

SIRS,—I shall be very pleased if you or any of your readers will kindly inform me whether it is customary for club surgeons to extract teeth gratuitously for members. This may seem a small matter, but in a country practice extractions are numerous, and as dentistry is quite a separate branch I cannot see that it need be included under the head of "Medicines and Medical Attendance." It appears to me that if we do this club members may just as reasonably expect us to stop teeth and even to perform other and more difficult operations which belong entirely to the dental specialist. I have always charged and been paid for extractions, but I find that some clubs in the neighbourhood have squeezed these in under the elastic heading of "Medical Contract."

I am, Sirs, yours faithfully,

Nov. 6th, 1900. JUNIOR.

"WANTED—A HOME."

To the Editors of THE LANCET.

SIRS,—In answer to Dr. Herbert Hart's query in THE LANCET of Nov. 3rd the National Association for Promoting the Welfare of the Feeble-Minded (Office, 58, Victoria-street, S.W.) has training homes for children of weak mind not certifiably imbecile. Terms from 7*s.* to 10*s.* per week.

I am, Sirs, yours faithfully,

Richmond-hill, Surrey, Nov. 6th, 1900. G. E. SHUTTLEWORTH.

Perplexed would be thankful for suggestions for treatment of the following cases. 1. Pruritus ani et scroti in a patient aged 25 years; generally worse at night. Many remedies have been tried, but relief has so far only been of a transitory nature. 2. Tinea sycosis, which has resisted treatment of various kinds for over six months.

M.B.—We cannot find upon the Register or in the Medical Directory the name of the medical man who gives the testimonial to the quack remedy. The testimonial is not fully dated. Of course it would be wrong for a medical practitioner to give such a testimonial.

E. M. W.—No connexion is known to exist between cancer and alcoholic abuses. Local irritation is stated to cause cancer of the lip in smokers but the predisposition must be very slight.

ERRATUM.—In THE LANCET of Nov. 3rd, p. 1306, col. 1, line 10 from foot, the word "gypsum" ought to have been *alum*.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 8th, 1900.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 a.m.
Nov. 2	30·10	N.	0·06	61	56	53	55	56	Overcast
,, 3	30·21	N.	...	61	57	53	53	54	Overcast
,, 4	30·13	S.	...	65	57	50	51	52	Cloudy
,, 5	29·85	S.W.	0·04	61	56	50	51	52	Overcast
,, 6	29·61	S.	0·07	69	57	52	52	53	Raining
,, 7	29·32	S.W.	0·14	59	52	51	51	52	Overcast
,, 8	29·93	S.W.	0·12	35	53	42	42	44	Fine

During the week marked copies of the following newspapers have been received: *Catholic Times (London), Gainsborough Leader, Scarborough Mercury, Birmingham Daily Post, Farm, Field, and Fireside (London), Burton Mail, Dundee Advertiser, Glasgow Evening News, Leicester Daily Post, Bradford Observer, Westmorland Gazette, East Anglian Daily Times, Liverpool Daily Post, Darwen News, North British Daily Mail, Sheffield Daily Telegraph, York Daily Herald, Hereford Times, Scotsman, Citizen, Yorkshire Post, Times of India, Pioneer Mail, Builder, Architect, Bristol Mercury, Huddersfield Examiner, Science Siftings, Spare Moments, The Sun, Sanitary Record, Local Government Chronicle, Reading Mercury, City Press, Hertfordshire Mercury, Abingdon Herald, Dunfermline Press, Torquay Times, Sheffield Daily Telegraph, Daily Express, Hampshire Independent, Mining Journal, Surrey Advertiser, North China Daily*

News (Shanghai), Local Government Journal, Skyrack Courier (Leeds), South-West Suffolk Echo, Colchester Journal, Eastbourne Gazette, Lincoln Echo, Banbury Guardian, Wolverhampton Chronicle, Midland Counties Herald, South London Press, Horncastle News, Public Health, Cape Register, Licensed Victuallers' Gazette, Sleaford Journal, Leeds Mercury, Carnarvon Herald, Worthing Intelligencer, &c., &c.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (17th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (12th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. Cases:—Dr. Cautley: Bi-lateral Birth Palsy.—Mr. Kellock: Mollities Ossium in a Child.—Dr. Caley: Vascular Swelling connected with the Thyroid.—Mr. Weeks: Congenital Locomotor Ataxy.—Dr. Dreschfeld: (1) Hyalin Degeneration of the Skin; (2) Adenoma Sebaceum.—Dr. Savill: Erythro-melalgia (Acroparæsthesia).—Mr. Wallis: Baker's Cyst of Leg (?). Mr. Little: Specimens from a Case of Late Rickets shown at a previous meeting.

TUESDAY (13th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (30, Hanover-square, W.).—Dr. A. H. N. Lewers: The After Results in 40 Consecutive Cases of Vaginal Hysterectomy performed for Cancer of the Uterus.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square, W.C.).—8 P.M. Mr. F. Browne: The Experiences of a British Pharmacist in China (illustrated by lantern slides).

WEDNESDAY (14th).—HUNTERIAN SOCIETY (London Institution, Finsbury circus).—8.30 P.M. Paper:—Dr. T. G. Stevens: Some Points in the Diagnosis and Treatment of Puerperal Sepsis.

THURSDAY (15th).—CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Prof. W. H. Woodward: The Training of Teachers.

HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Dr. R. Maguire: The Prognosis and Treatment of Tuberculous Disease of the Lungs. (Harveian Lecture.)

FRIDAY (16th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (Evelina Hospital, Southwark-bridge-road, S.E.).—5.30 P.M. Cases will shown by Dr. Carpenter, Dr. Chaffey, Dr. Sunderland, Mr. Tubby, Mr. Lucas, and Mr. Edmunds. Papers:—Dr. T. Fisher: Cases of Thrombosis of the Cerebral Veins in Children.

EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Dr. Patrick Manson (President): Some Problems in Tropical Epidemiology. (Inaugural Address.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Beddard: Diet in Health and Disease.

TUESDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Ewart: Consultation. (Medical.)

THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—5 P.M. Mr. G. Pernet: Differential Diagnosis of Syphilitic and Non Syphilitic Affections of the Skin.

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.—(Museum of Practical Geology, Jermyn-street S.W.).—8.30 P.M. Right Hon. Lord Avebury: Huxley Memorial Lecture.

WEDNESDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Mr. W. H. A. Jacobson: Clinical Lecture. Some Remarks on the Question of Early Operation in Acute Appendicites

LONDON THROAT HOSPITAL (204, Gt. Portland street, W.).—5 P.M. Dr. Woakes: Nasal Polypus with special reference to its recurrence. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Horton-Smith: Bronchiectasis.

THURSDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Lees: Demonstration of Selected Cases.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Dr. D. Grant: Diagnosis of Diseases causing Stridor or Obstruction to Respiration.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Eden Gynæcological Demonstration. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: Surface Anatomy.

FRIDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—2–3.30 P.M. Dr. J. Taylor: Class. Clinical Examination of the Nervous System. 4 P.M. Dr. J. D Grant: Consultation. (Ear.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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